

REVIEW ARTICLE

What's Mom Needs for Their Preemie After NICU Discharge? A Scoping Review

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ABSTRACT

Support and education are vital for preemie moms to provide a comprehensive guide and ensure effective implementation of relevant information for premature baby care after NICU discharge. The present study aimed to determine the component of caregiving activities for premature babies. A six-stage methodological framework was used in guiding the review process recommended by Arksey and O'Malley (2005). The EBSCOhost Medical database, which included Medline, Psychology and Behavioural Sciences Collection, and Ovid, grey literature, reference list, and the Google Scholar search engine, was used for the search strategies. A total of 105 studies of English-language articles were tracked from the year 2000–2016. Selecting only full text and peer review resulting in ten studies and eight relevant documents. Nineteen themes were identified related to premature baby care activities. In conclusion, the themes revealed were best described as specific caregiving activities for premature babies valuable for mothers to organise post-discharge care. To engage, mothers should provide appropriate care to their premature babies as NICU babies are more fragile than normal newborn babies.

Keywords: Neonatal Intensive Care Unit, Premature baby, Maternal needs, Nursing, Self-reliance

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INTRODUCTION

Knowledge deficit among parents, particularly mothers of premature babies, resulted in a lack of information about their babies' daily needs following hospital discharge. It is a warning sign for neonatal nurses to help mothers develop the appropriate skills to protect their babies from any dangerous situation after hospital discharge. Support and education can help realise the desire of mothers to manage care activities on their premature babies (1,2) and aid the transition to motherhood (3). It is also crucial for community health nurses in particular to provide health education (4). The viewpoint helps ensure continuity of care following neonatal intensive care unit discharge. It helped educate mothers about the initial intervention programme and was also intended to inspire active family involvement in the care of their premature baby. Hence, practical caregiving activities for early newborn care at home must be emphasised.

Furthermore, essential care for every newborn, such as providing warmth, giving early and exclusive breastfeeding, hygienic practices and providing neonatal resuscitation when necessary, is vital for the mother.

However, extra attention to thermal care, like kangaroo mother care (KMC), radiant warmers and incubators, and baby hats and blankets, is the main focus of care for premature babies. Besides that, the guide also gives extra attention to skincare and infection prevention, additional support for breastfeeding, including express breast milk (EBM), infant feeding, and safe oxygen use if required with close monitoring (5). Based on the discussion, it is essential to acknowledge the parents and families, especially the mother, as partners in the care.

Sharing the researcher's experiences, parents of babies admitted to the NICU constantly voice up and share their feelings of inadequacy, fear and unawareness about things they do not know. They feel that they are unimportant parents and confused about their role to be played in the unit. This situation can be discussed in that they need enough information about their baby's status and education for infant care to deal with their feelings. This statement is in line with the study to identify gaps in the need for premature birth that has been carried out (6,7). The researchers have revealed that parents feel they are not given enough information regarding the care of their baby while in the NICU. Nearly 86 per cent of the information provided to parents is delivered verbally, 65 per cent in brochure form and 59 per cent in written statements. The study's findings also reveal that 13 per cent of the 502 parents surveyed need

additional information, especially on their infant feeding and breastfeeding and the needs of support groups. Aside from that, parents enjoy having an experience, having the ability to practise, and having enough time to plan a given task. In addition, most parents are more concerned once the essential sources of information they need are answered relevantly before the baby can be discharged. Hence, researchers strongly agree that mothers of premature babies should be given accurate and reliable details when caring for their babies after being discharged from the NICU.

One of the most critical needs in the NICU for premature babies' mothers is breastfeeding support. Successful breastfeeding practised until a month (8) or more than a month after the baby is allowed to discharge home (9) were proved. Besides that, a study found the practice for infant massage among premature baby is proven improved as at three months; 1) mothers of premature infants feel significantly less disturbed to care for their babies; 2) enhanced good mother-baby interactions; 3) the baby demonstrated more social involvement compared to the control group (9). Apart from that, previous studies have discussed continuity of care and home visits for the opportunity to community engagement (8,10). The care activities for the infants have emphasised educating a postnatal mother, especially a new or first-time mothers, including 1) infant feeding (breastfeeding or bottle feeding); 2) baby bathing methods; 3) diapering; 4) umbilical care; 5) circumcision care; 6) measuring baby's body temperature; 7) safety needs; 8) blood tests needed for the infants; 9) growth and development; 10) signs of health problems, and 11) immunisation (10). As a result, the current research was carried out to identify the components relevant to basic knowledge about home care activities for premature babies. The aim is to make available a comprehensive guide for parents or guardians of premature babies.

MATERIALS AND METHODS

The scoping review was selected to delineate the breadth of studies on maternal needs concerning premature baby care activities. This method can explore the extensiveness and depth of what is known about the topic (11–13). A flow diagram of study selection was illustrated in Fig. 1, guided by the PRISMA statement for systematic review protocols (14). Furthermore, the review was directed on the six-stage established methodological framework of conducting scoping reviews: 1) identifying the research question; 2) identifying relevant studies; 3) study selection; 4) charting the data; 5) collate, analyse, and report results and 6) consult(11). Additionally, additional records from other sources through existing networks, references list, and existing documents from a relevant organisation have been identified. This method can support as much information as possible and help find new ideas for the context of the study (12,15).

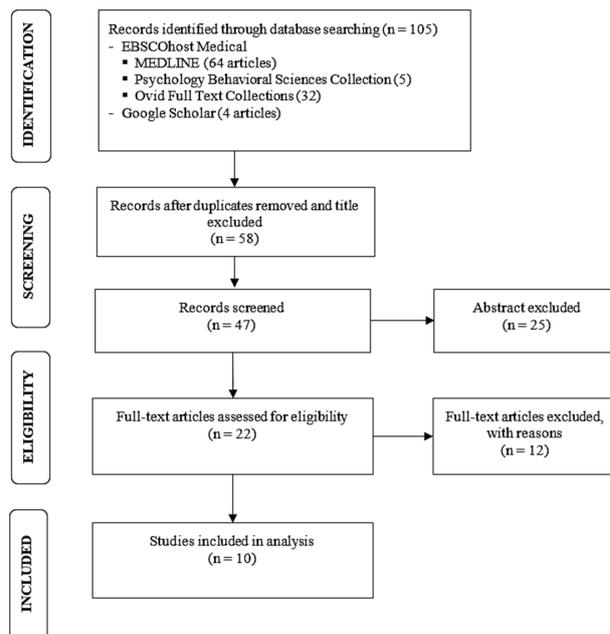


Figure 1: Flow diagram of study selection (PRISMA)

Identifying the research question

The review questions are as follows:

1. What are the mother's needs for premature baby caregiving activities following NICU discharge?
2. What are existing practices used among mothers of a premature baby for their care following NICU discharge?

Identifying relevant studies

An electronic database from the EBSCOhost Medical search engine was used for the comprehensive search process. The MEDLINE Complete and Psychology and Behavioural Sciences Collection, and Ovid Full-Text Collections were involved in searching for all types of studies. In addition, the search process was continued with the Google Scholar search engine. Keywords used for the search strategies included the study population, the environment required in the study, the study sample, specific interventions and related outcomes. The Boolean operators 'AND' and 'OR' combine the words and phrases in each set. Basics search using keywords was done as follows:

- Neonatal Intensive Care Unit OR post-discharge OR after NICU care AND
- premature baby OR nursing baby OR postnatal care AND
- transition to home OR care at home OR discharge planning AND
- maternal needs OR parenting OR self-efficacy OR parent's participation AND
- health education OR information for parents.

Study selection

The study selection criteria included English articles for quantitative and qualitative studies, concept articles,

literature review, educational materials and documents related to premature baby care. It also contains research articles and papers that address the need for information about care activities and health education in the NICU and after discharge. The study omitted research articles and documents that did not address the discharge plan or aspects of knowledge and education requirements for parents and guardians.

Data chart, collate, analyse and report findings

Table I organised data from eligible studies about the authors, publication year, the study's title, the study's design, the objectives and purposes, the study sample, methods of data collection, and study findings relevant to the review. Meanwhile, themes identified for activities of premature baby care are presented in Table II and Table III.

Consultation

Consultation from nurse practitioners and mothers was conducted to ensure accuracy, realistic and valuable information of the care activities. The data is analysed based on individual needs by input from premature babies and nurses in the NICU during informal interviews. An unstructured interview protocol with guided questions was used. This stage can accommodate the research gaps in the existing literature and bring them into a perspective piece (11,15). The interview aims to explore any related problems of their experiences in delivering information to the mothers in the NICU. For example, do the nurses give their opinion on the challenges experienced by the premature baby after discharge? And what kind of care do premature baby's need at home? However, the mothers give their responses to explore conditions for providing care to their premature baby in the NICU and after discharge. The mothers shared their experiences on the subjects that should be highlighted when they are being told their baby is allowed for discharge, how they deal with the challenges while caring for their premature baby at home, and what kind of care activities they require.

Appraisal of quality

The quality of the eligible studies has been evaluated through the critical appraisal checklist to make the results of a scoping review more understandable. The Scottish Intercollegiate Guidelines Network (SIGN) critical appraisal checklist was used in this present study to evaluate the systematic literature review studies (16,17). As a result, the requirements for the internal validity and quality of the research were obtained. Furthermore, the study was conducted based on the guiding questions and according to the search objectives. As a result, the essential elements of systematic research have been met and were identified as having an explicit search strategy, adheres to the defined criteria for inclusion and exclusion, and are methodologically consistent.

Meanwhile, The STROBE checklist has critically

appraised the descriptive study design in the present study. The STROBE statement was benefited in evaluating and appraising observational studies, cross-sectional, case-control, and cohort studies (18). The evaluation outcomes prove that the selected study article can quickly identify the study design in the title and describe clearly the abstract, introduction, methodology, research findings, and discussion.

The Critical Appraisal Skills Program (CASP) checklist is an appropriate tool for a critical appraisal in community health practices to evaluate the qualitative studies (16,19). Thus, it was used to critically appraise the qualitative studies in this review, led by three key questions. These questions include: 1) Are the results of the study reliable; 2) What were the results; 3) How useful were the results for this study? The results of the appraisal show that the findings of the study are valid. The objectives of the study were clearly stated and indicated the importance and relevance of the study. The study provides a clear description of the selection process for the study sample. It was appropriate and knowledgeable in the field of study. Likewise, data analysis techniques are clear using the correct analysis approach. Thus, the study proves that the qualitative method approach is appropriate and achieves the study's goals.

RESULTS

Fig. 1 illustrates a flow diagram of study selection (PRISMA), which explains 105 studies tracked across the databases. It includes 64 studies from MEDLINE Complete, five studies from Psychology and Behavioural Sciences Collection and 32 studies from Ovid Full-Text Collections. A total of four studies were obtained from the Google Scholar search engine. Following that, 58 studies were excluded due to duplication of records and not meeting the criteria for study title. Next, the studies were screened with a further limit to the year of publication from 2000 - 2016, full text and peer review, and 47 studies remained. Finally, abstracts were screened for relevance, leaving 25 studies for further consideration.

Next, the search is limited to special restrictions for the English language. Next, the eligibility of 22 full-text study articles was evaluated, and 12 studies were eliminated due to inappropriate subjects of research and not discussing the context of care activities for the premature baby. Of these, ten studies were met the selection criteria and listed for final review (Figure 1). Thus, a total of four out of ten eligible studies were review studies (9,20–22), while three studies are descriptive, cross-sectional design (10,23,24) and the other three were qualitative studies (1,25,26). Subsequently, four studies used a survey for the data collection, including an online survey, mailed survey and questionnaire survey (10,23,24,26). In contrast, two studies used interview (1,25) as a method for the data collection.

Table 1: Data from the eligible studies

| Author, Year | Title | Study design, Objective/Purpose | Number of subjects/ Sample characteristics | Methods of data collection | Findings |
|--------------------------|--|--|--|--|--|
| Ruchala, 2000 (10) | Teaching new mothers: priorities of nurses and postpartum women | Descriptive; A study on the priorities of nurses and postnatal mothers in identifying the most important content areas for the education of new mothers. | 71 registered nurses who responsible for in-hospital maternity nursing care; 53 responsible for postpartum follow-up home care visits; and 103 low-risk postpartum women. | Survey; Data collection for nurses was conducted via mailed surveys and for new mothers, the data were collected in-hospital after delivery and via mailed surveys | Priority to teaching given by the nurses about infant care, and new mothers most concern for their own care. |
| Merritt 2003 (20) | Early NICU discharge of very low birth weight infants: a critical review and analysis | Critical review; To report on the measures for NICU discharge based on physiological stability and parental preparation. | Report from annual summaries of the Vermont–Oxford for years 1997–2000; reports in professional and lay press; 15 peer reviewed report and related studies; the 2001 report from the NICHD Neonatal Network. | Structure of critical review on randomized trials and descriptive experiences for the programs of early NICU discharge. | The length of NICU stay successful reduced in trends after the implementation of programs for early hospital discharge with home nursing and neonatologist; standards of care were reviewed and some of the professional guidelines of the discharge of premature babies were summarized to expand on variations in care. |
| Brett et al. 2011 (9) | A systematic mapping review of effective interventions for communicating with, supporting and providing information to parents of preterm infants. | Systematic review; to evaluate the effectiveness of communication with parents to premature babies using intervention for parent support. | 72 studies - 19 randomised controlled trials, 16 cohort or quasi-experimental, and 37 non-intervention studies. | Systematic searches via electronic databases for journals from January 1980 to October 2006 and hand-searching of reference lists. | Interventions programmes for parent support: (1) individualised developmental and behavioural care; (2) behavioural assessment scales; (3) breastfeeding, kangaroo-care and infant-massage; (4) support forums for parents; (5) the alleviation of parental stress; (6) Parents' preparation for first time meeting with their baby; (7) communication and information sharing; (8) discharge planning; and (9) home-support programmes. |
| Pennell et al. 2012 (23) | Prematurity and parental self-efficacy: The Preterm Parenting & Self-Efficacy Checklist | Correlational, cross sectional; to develop a preterm infant care checklist and parental self-efficacy. | 155 parents - 83 parents of very preterm babies (< 32 weeks), 40 parents of preterm babies (< 37 weeks) and 32 parents of term babies. | Survey; was conducted online. | Validated and reliable Preterm Parenting & Self-Efficacy Checklist was developed. Significant relationship reported between parental self-efficacy about parenting tasks with psychological symptoms and parental self-perceived competency. |
| Cho et al. 2012 (24) | Parental concerns about their premature infants' health after discharge from the neonatal intensive care unit: a questionnaire survey for anticipated guidance in a neonatal follow-up clinic. | Cross-sectional; to develop a guideline on appropriate nursing information for premature infants after NICU discharge. | Parents of 390 premature infants (birth weight, <2500 g; gestational age, <37 weeks) who went to a neonatal follow-up clinic after NICU discharge. | Questionnaire survey | Parental concerns related to 1) developmental delay; 2) growth failure specifically in body weight and length, and higher specificity and lowest sensitivity on overweightness; 3) infectious diseases commonly for respiratory tract infection were experienced by 30% of the premature infants before 18 months of corrected age. |
| Chiodi et al. 2012 (21) | Health education and the family of the premature baby: an integrative review | Integrative review; to identify the educational needs in family health of the premature baby. | 10 studies | Electronic databases search from the year 1999 and 2011. | Participation in infant care activities, preparation for discharge, and educational material usage in neonatal unit. |
| Philips-Pula 2013 (1) | Caring for a preterm infant at home: a mother's perspective | Qualitative - Phenomenological study; to examine experiences of mothers to premature baby in the first 6 months at home after NICU discharge. | 8 mothers | Interview | Themes revealed for fear, exhaustion, determination, and thankfulness. |
| Smith et al. 2013 (22) | Neonatal intensive care unit discharge preparation, family readiness and infant outcomes: connecting the dots | Literature review about discharge readiness among caregivers of the infant in NICU. | Studies on discharge readiness in relation to the NICU population. | Literature review | Inadequate preparation for hospital discharge of high-risk infant; resulting in poorer infant outcomes, increased in family anxiety and increased use of healthcare support after discharge. Outline an approach to NICU discharge preparation for a quality discharge teaching. |
| Burnham 2013 (25) | Parents' perceptions regarding readiness for their infant's discharge from the NICU | Qualitative; to identify parental needs for discharge readiness of their infant from neonatal intensive care unit (NICU). | 20 parents of infants admitted to Level III NICU in 2011 to 2012 | Interview | Parents specified needs for information and hands-on practise; their infant's condition and NICU environment influenced the parents' perceptions of readiness for discharge |
| Boykova 2016 (26) | Life after discharge: what parents of preterm infants say about their transition to home | Qualitative; to explore experiences of parents of premature babies after hospital discharge. | 52 parents | Online survey | Childcare of premature babies is challenging task; caregiving is physically demanding; having a premature baby alters parental role; can be socially disruptive; and requires greater health care professionals' support. |

Meanwhile, the review studies used a structured and systematic search to collect the data (9,20–22).

Besides that, eight documents are acknowledged from the existing networks and a list of references. The seven documents' findings include one record on discharge package for premature baby (27) and six papers related

to a guide on neonatal or premature baby care (28–33). Apart from that, one document from the relevant organisation in a local setting is helpful for further review (34).

Activities of premature baby care

There are 19 activities of premature baby care that were

Table II: Activities of premature baby care from existing literature

| Author, Year | Title | Care activities | | | | | | | | | | | | | | | | | | |
|--------------------------|---|-----------------------------|-----------------------------|---|-----------------------------------|----------------|---|---|------------------------------|----------------|-----------|-----------------------|------------------------------------|---------------|-----------------------------|-------------------------|------------|---|--|------------------|
| | | Information about premature | Risk against health problem | Sign and symptom of illness / baby cues | Dealing with respiratory problems | Infant feeding | | | Body temperature measurement | Bathing a baby | Diapering | Skin care & cord care | Comfort / excessive crying / colic | Infant safety | Safe sleep/ SIDS prevention | Prevention of infection | Medication | Danger sign/ immediate emergency action | Growth & development, follow up visit & immunization | Needs of support |
| Ruchala 2000 (10) | Teaching New Mothers: Priorities of Nurses and Postpartum Women | | | ✓ | | ✓ | ✓ | | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | | ✓ | | |
| Merritt 2003 (20) | Early NICU discharge of very low birth weight infants: a critical review and analysis | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Brett et al. 2011 (9) | A systematic mapping review of effective interventions for communicating with, supporting and providing information to parents of preterm infants. | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | ✓ |
| Pennell et al. 2012 (23) | Prematurity and parental self-efficacy: The Preterm Parenting & Self-Efficacy Checklist | | ✓ | ✓ | | ✓ | | | | ✓ | ✓ | | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ |
| Cho et al. 2012 (24) | Parental concerns about their premature infants' health after discharge from the neonatal intensive care unit: a questionnaire survey for anticipated guidance in a neonatal follow-up clinic | | ✓ | | ✓ | ✓ | ✓ | ✓ | | | | ✓ | ✓ | | | | | | ✓ | |
| Chiodi et al. 2012 (21) | Health education and the family of the premature baby: an integrative review | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | | | | ✓ | | | ✓ | |
| Philips-Pula 2013 (1) | Caring for a Preterm Infant at Home: A Mother's Perspective | | | ✓ | | ✓ | ✓ | ✓ | | | | | ✓ | ✓ | | | | ✓ | | |
| Smith et al. 2013 (22) | Neonatal intensive care unit discharge preparation, family readiness and infant outcomes: connecting the dots | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| Burnham 2013 (25) | Parents' Perceptions Regarding Readiness for Their Infant's Discharge from the NICU | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| Boykova 2016 (26) | Life After Discharge: What Parents of Preterm Infants Say about their Transition to Home | | | | | ✓ | ✓ | ✓ | | | | | ✓ | | | | ✓ | | ✓ | ✓ |

themed based on the review of the selected studies and the documents. All the themes were summarised in Table II and III. The themes are include 1) information about premature; 2) risk against health problem; 3) sign and symptom of illness/ baby cues; 4) dealing with respiratory problems; 5) breastfeeding, 6) bottle feeding, 7) other methods of infant feeding; 8) body temperature measurement; 9) bathing a baby; 10) diapering; 11) skincare & cord care; 12) comfort/ excessive crying/ colic; 13) infant safety; 14) safe sleep/ SIDS prevention; 15) prevention of infection; 16) medication; 17) danger sign/ immediate emergency action; 18) growth & development, follow up visit and immunization; and 19) needs of support.

In systematic reviews of 72 studies, 19 randomised controlled trials studies, 16 cohort or quasi-experimental, and 37 non-intervention studies were published on various premature baby care activities (9). Information,

communication and support that parents need before birth, during care in the NICU, and after discharge were described in the studies. The results show and consistent with the other studies, which specified the parents in the NICU need support for the practice of breastfeeding (1,10,20–26), kangaroo mother care (KMC), and massage for their infant (9,20,23,26). In addition, the parents also need to be informed of any existing support groups among parents and health care providers. As for the discharge plan, an initial discharge program and home visit are required by providing individualised care. Another critical approach is a structured discharge plan for premature baby care, focusing on safe sleep and breastfeeding as care components. Moreover, the parents must be taught how to perform and care for their premature baby during the home visit session following the information provided about caregiving activities.

The parents discussed their experiences in a qualitative

Table III: Activities of premature baby care from the existing document

| Author, Year | Title | Care activities | | | | | | | | | | | | | | | | | |
|---|---|-----------------------------|-----------------------------|---|-----------------------------------|----------------|---|---|------------------------------|----------------|-----------|-----------------------|------------------------------------|---------------|-----------------------------|-------------------------|------------|---|--|
| | | Information about premature | Risk against health problem | Sign and symptom of illness / baby cues | Dealing with respiratory problems | Infant feeding | | | Body temperature measurement | Bathing a baby | Diapering | Skin care & cord care | Comfort / excessive crying / colic | Infant safety | Safe sleep/ SIDS prevention | Prevention of infection | Medication | Danger sign/ immediate emergency action | Growth & development, follow up visit & immunization |
| McMaster Children's Hospital, 2007 (32) | Information for parents of preterm babies less than 30 weeks gestation | √ | √ | | √ | √ | √ | √ | √ | | | | | | | √ | | √ | √ |
| American Academy of Pediatrics, 2008 (33) | Hospital discharge of the high-risk neonate: Policy statement | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| March of Dimes et al., 2012 (?8) | Born too soon: The global action report on preterm birth. Package 1: Essential and extra new born care | | | | | √ | | √ | √ | √ | √ | | | | √ | | √ | | |
| Bliss, 2012 (29) | Going home. The next big step | | √ | √ | | | √ | √ | | | | | √ | √ | √ | √ | | | √ |
| Ministry of Health Malaysia, 2013 (34) | Perinatal Care Manual: Neonatal Care. | | √ | | | √ | √ | √ | √ | | | | | √ | √ | √ | √ | | √ |
| US Department of Health and Human Services, 2013 (30) | Transitioning newborns from NICU to home. Family Information Packet (Agency for Healthcare Research & Quality 2013) | | | √ | √ | √ | √ | √ | | | | | | | | √ | | | |
| National Association of Neonatal Nurses, 2014 (31) | Baby Steps to Home: A Guide to Prepare NICU Parents for Home | | | | √ | √ | | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| Ingram et al. 2016 (27) | The 'Train-to-Home' package | | | | √ | √ | √ | √ | √ | | | | √ | √ | | | | √ | |

study during the transitional period from the hospital (26). The parents reported joy with anxiety in which the pleasure is at being allowed to go home but feeling worried and fear if the baby becomes sick at their hand. The other studies support the need for general information regarding premature babies and the risks to health problems (1,10,20–25). In addition, the results of the survey have initiated the need of parents for information related to breastfeeding techniques and their challenges, management, and administration of medications, knowledge, and information on infant care, infant behaviour, and growth and development.

Following that, an integrated literature review paper was identified health education as a need for parents (21). Most of the findings found that the mother's involvement in providing care to their baby should include hygiene practice (9,10,20–23,25), nutritional needs, measurement of vital signs, especially the body temperature, skills training on physiotherapy for respiratory support and identifying the danger signs (1,9,10,20–26). There are also results on the involvement in parent support groups. Moreover, there is preparation for hospital discharge would involve the information and health education on breastfeeding,

hygiene practice, bathing, diapering, management of secretions in the airways, handling techniques, bonding skills, and the risk and signs and symptoms of the health problems. In addition, the information also involves the need for follow-up visits, management and administration of medications, immunisation, and the growth and development of the baby.

In another qualitative study using a phenomenological approach, mothers have shared understandings and descriptions of their daily experiences with their premature baby after discharge (1). The mothers have expressed unknown fears about breastfeeding practice, the danger signs, immediate emergency action, infant safety, and safe sleep to prevent sudden infant death syndrome (SIDS) among premature babies (1). Then, discharge criteria were discussed for the premature baby in the NICU, focusing on physiological stability and parental preparation after discharge (20). The results of the reviews involving clinical observations, randomised and non-randomised trials, guidelines and criteria for reporting the preterm baby's progress before discharge. After discharge, the care activities for parental preparation resulted in feeding techniques, which are bottles or breastfeeding, care of the hygiene, body

temperature control, and skills in providing comfort to the infant and resuscitation techniques. To understand and identify early signs and symptoms of the disease, safety prevention for infants has been emphasised to encourage early action and access to medical emergency services.

A study was conducted among premature and term babies parents to identify parental self-efficacy and self-perceived competency in providing care to their babies (23). The parents involved in the study agreed that appropriate, certain activities were crucial in caring for the premature baby after being discharged from the NICU. For example, performing proper breastfeeding, bathing, diapering, dealing with colic and excessive crying, recognising baby cues, identifying danger signs, adopting safe sleeping methods to prevent SIDS, ensuring baby safety, resuscitation management and emergencies, administering medications, and adhering to follow-up visit appointments were encountered essentials. These competencies are also discussed in other studies.

In addition to the research articles, some documents are reviewed to obtain information about premature baby care. Among the selected papers is a policy statement issued regarding hospital discharge for high-risk infants (33). The category of high-risk infants includes premature babies. The AAP emphasises the following elements of the initial discharge program: physiological stability, activating parental involvement programs and home care preparation, managing the post-discharge healthcare team, and organising programs to focus on the baby's growth and development. The three physiological competencies developed before premature discharge involve adequate breastfeeding to support infant growth (27–29,31–34), the ability to maintain an average body temperature (27–29,32–34) in the home environment and adequate respiratory control (27,28,31–34). The AAP also discusses the importance of preventing sudden infant death syndrome (SIDS) in premature babies and also supported by others (27,30,32–34). Therefore, the elements of health education should include information related to premature babies in general and the baby's medical status so that parents understand and are more sensitive to any situation that may occur at home.

DISCUSSION

The present study found that the scientific information obtained from the need's analysis process through a structured literature review is essential for conveying accurate information to the mother of a premature baby. It can also determine the condition for relevant details about the premature baby's care after NICU discharge. The results show that it is appropriate to the mother's needs and includes all the caregiving activities for the premature baby. Routine practised for NICU care where the study is about verbal information delivered

through nurse initiative while performing their task with encouragement for parental participation. Specific information, such as breastfeeding activities, is required to boost mother's confidence in giving care to their baby in NICU or after discharge (9). Families who are not ready to be discharged from the NICU encounter difficulties after discharge, especially in breastfeeding and the absence of basic supplies related to infant feeding (35).

Information about premature

Premature baby care becomes necessary as mothers' knowledge of early baby care is little known in the local setting. The information gained from the interview session with the mothers and the nurses in the NICU. The mothers would appreciate having information about their baby's health status and advice on caring for their premature baby. However, the nurses expressed their concern that breastfeeding is the most critical responsibility for mothers in meeting the baby's feeding requirements. Besides that, the risk of infection, the baby's hygiene and comfort, awareness of danger signs, and follow-up visits were critical.

The needs for care activities that have been identified offer an understanding to mothers for best accept the presence of their premature baby and organise the care process after discharge. Therefore, the general information about premature should be delivered constantly (29,36–39). Besides that, the need for information regarding the discharge criteria for premature babies should be provided before being allowed to go home. All the information helps the mothers to understand the baby's health status (39). Similar needs have been at the core of several studies (9,21,24,25).

Furthermore, mothers should be more sensitive to the possible danger signs caused by the risk of health problems due to the physiological state of immaturity (5,39–41). The attention given will make it easier for parents to take early action for consideration to emergency assistance (1,9,20,22,23). It shows that the mothers want to be informed about physiological signs at home to keep their baby safe. Parents ability to recognise the signs and symptoms of the emergency conditions were well adopted. Therefore, mothers need to be informed what practice required, whom to refer and where to bring their baby if their health status declines.

Infant feeding

Feeding for the premature baby has been highlighted as one of the crucial needs for the mother. Mothers need to recognise the feeding cues that indicate the baby is hungry or breastfed to facilitate breastfeeding preparations. These cues are beneficial ineffective breastfeeding as infants do not become restless or restless due to delays in identifying early indications of infant hunger (25). Success in breastfeeding is a breakthrough

in the improvement of maternal competence. A study reported that breastfeeding practices among mothers in the NICU had been successfully practised consistently up to more than a month after infants are allowed to discharge (9). Besides, information giving about infant feeding can be discussed, including frequency of feeding based on the daily needs according to the baby's current weight (39,42).

The top priority of feeding premature babies is breastfeeding, which has been proven to help improve health and strengthen the baby's antibodies by building the body's immune system. The breastfeeding practice was emphasised on best breastfeeding position, techniques and storage methods for expressed breast milk (EBM). Additionally, the information needs for proper and effective practices of EBM is essential. It should accompany the frequency of milk expression to stimulate breast milk production and achieve adequate feeding (43). Early guidance to breastmilk management is often required of infants with exclusive or non-exclusive breastfeeding (44).

Moreover, feeding the infant through cups and bottles also needed to ensure information related to the feeding for premature babies is obtained (45,46). The information that requires close attention were proper feeding techniques, effective hand washing, appropriate containers, cleaning, disinfecting and storing the feeding bottles (47). Further discussion is closely related to infant feeding, which is burping. Burping is one of the techniques in managing the baby after feeding to reduce the risk of choking. In addition, the practice of burping can prevent from becoming bloated and nauseous (45).

Prevention of infection

Effective hand washing is a fundamental practice for infection prevention, and it is essential for mothers when caring for a premature baby at home. Mothers involved in the care of their babies are more sensitive to the signs and symptoms of infection. Maintaining breast milk is also an excellent way to avoid conditions that can harm the premature baby (24,28,48,49). The signs and symptoms of infection include instability of the body temperature, refusal to feed, loss of weight, becoming tired, lethargic, pale, irritated or constantly whining, vomiting and diarrhoea, and rapid breathing with a high pulse rate. The emphasis on infection prevention also includes actions to restrict visitors, keep babies away from the public, protect babies from contact with sick people, and continue feeding, particularly in the first year after birth (49).

Hygiene needs and control of body temperature

Furthermore, in addition to hygiene to keep the baby clean, mothers should take care of their clothing, equipment, and daily activities. The mothers also have to understand the baby's bathing technique. These bathing

skills are for the baby's hygiene and emphasise the importance of controlling the baby's body temperature during bathing. This information is important because premature babies require extra care, especially in the control of body temperature. Exposure of the whole body is not recommended to avoid the risk of heat loss and resulting in hypothermia.

Routinely bathing a premature baby is not compulsory as it shows physiology and behavioural effects during bathing, while the appropriate temperature for bath water should not exceed 37°C between 34°C and 36°C (50,51). Furthermore, premature babies should only be bathed two to three times a week using a mild soap. In contrast, the selection of products used on the baby's skin should not contain only a tiny amount of additional fragrance to reduce the incidence of contact sensitisation (48). Skincare of premature babies should also be given attention because their skin is fragile, sensitive, and quickly becomes redness or rash, especially in the lower abdomen, buttocks, genitals, and around the thighs (48).

Diapering skills are emphasised to the mother to become more attentive to the signs of discomfort such as bowel habits, abnormalities in the baby's skin, pain responses indicated at all times changing the diapers. Additionally, the baby's buttocks and perineal should be cleaned every time they change the diaper or, if necessary, use a cotton swab soaked in lukewarm water and soap, then dried the area before wearing a new diaper (39,48).

Comforting the premature baby

Among the baby's expressions that are often a problem for the mothers is incessant crying. Crying is how babies want to tell that they need comfort and care, and it is among the ways babies communicate (48). The best way to deal with this problem is to calm the baby. A good and comfortable environment should be created to soothe the baby, swaddle with a blanket and give a tight hug (holding an upright position on the shoulder or giving skin-to-skin contact) (48). Besides that, excessive crying that is too long and prolonged is where bloating or colic occurs in the babies. It has a stressful effect on the mothers or caregivers as the babies show very uncomfortable reactions through their behavioural changes (52,53).

Moreover, the practise of massage for premature babies in addition to skin-to-skin contact (kangaroo mother care) by optimising the physiology of the infant body (54), at the same time is a fun approach to mothers and caregivers because of the positive effects shown on the baby as well as the mother. However, what needs to be understood is that massage for the needs of premature babies is practically done through loving gentle touches as a positive communication between mother and baby. Mothers also feel happy when they get a good response from the baby during the massage, increasing

the interaction between mother and baby (55,56).

Safe sleep, health care visit and support for mothers

The emphasis on safe sleep is intended to lower the risk of premature babies developing sudden infant death syndrome (SIDS). Sleep position has been highlighted as one of the reasons for the problem. The risk rate for SIDS is reduced to 50% after the recommendation to a prone sleeping position as a healthy position for infants (28,57). Next, SIDS related education to mothers or caregivers should be provided to enable them to be more sensitive to the baby's condition at all times of sleep as SIDS can occur suddenly even if the baby is healthy (57).

Likewise, the emphasis on the need for follow-up visits fulfils the appointment and immunisation schedule for premature babies. Besides that, home care visits, especially for a first-time mother, are also needed to assess the baby's health progress, provide continuing education, and support the mothers (7,58). It also serves as a mechanism in identifying the need for additional referrals for premature babies experiencing or at risk for developmental problems.

CONCLUSION

The scope of the present study has highlighted the mother's needs for activities related to premature baby care after discharge to home. The discussed care activities can guide the researchers in developing comprehensive educational materials for mothers with premature babies and encountering local socio-cultural needs. As for health care practitioners, the delivery of care should be tailored to maternal and family cultural practices to support mothers and their premature babies (59). Socio-cultural practices are commonly used for self-belief, convenience, family pressure, and satisfy the elders (60). Hence, education should be directed towards families to change any potentially harmful practices that may jeopardise mother and child health (61).

In conclusion, a thoughtful understanding of mothers' needs in premature baby care can be translated to neonatal nursing practises, thereby enhancing maternal and infant care standards. Concisely, the identified specific care activities of the premature baby have benefited the mother's engagement in caregiving activities for their baby at home.

REFERENCES

- Phillips-Pula L, Pickler R, McGrath JM, Brown LF, Dusing SC. Caring for a Preterm Infant at Home. *J Perinat Neonatal Nurs*. 2013;27(4).
- Lomotey AY, Bam V, Dijj AK, Asante E, Asante HB, Osei J. Experiences of mothers with preterm babies at a Mother and Baby Unit of a tertiary hospital: A descriptive phenomenological study. *Nurs Open* [Internet]. 2020 Jan 27 [cited 2021 Apr 20];7(1):150–9. Available from: <https://onlinelibrary.wiley.com/doi/abs/10.1002/nop2.373>
- Heydarpour S, Keshavarz Z, Bakhtiari M. Factors affecting adaptation to the role of motherhood in mothers of preterm infants admitted to the neonatal intensive care unit: a qualitative study. *J Adv Nurs*. 2017;73(1).
- WHO. Enhancing the role of community health nursing for universal health coverage [Internet]. World Health Organization. Geneva. 2017. 32 p. Available from: <http://www.who.int/hrh/resources/health-observer18/en/>
- Lawn JE, Davidge R, Paul VK, von Xylander S, de Graft Johnson J, Costello A, et al. Born too soon: care for the preterm baby. *Reprod Health* [Internet]. 2013;10 Suppl 1(Suppl 1):S5. Available from: <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=3828583&tool=pmcentrez&rendertype=abstract>
- Kim AR. Addressing the Needs of Mothers with Infants in the Neonatal Intensive Care Unit: A Qualitative Secondary Analysis. *Asian Nurs Res (Korean Soc Nurs Sci)*. 2020 Dec 1;14(5):327–37.
- Berns SD, Boyle MD, Popper B, Gooding JS. Results of the premature birth national need-gap study. *J Perinatol* [Internet]. 2007 Dec [cited 2014 Sep 16];27 Suppl 2:S38–44. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/18034179>
- Van Ryneveld M, Mwangome M, Kahindi J, Jones C. Mothers' experiences of exclusive breastfeeding in a post-discharge home setting. *Matern Child Nutr* [Internet]. 2020 Oct 21 [cited 2021 Apr 20];16(4):e13016. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/mcn.13016>
- Brett J, Staniszewska S, Newburn M, Jones N, Taylor L. A systematic mapping review of effective interventions for communicating with, supporting and providing information to parents of preterm infants. *BMJ Open* [Internet]. 2011 Jan 1 [cited 2014 Sep 16];1(1):e000023. Available from: <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=3191395&tool=pmcentrez&rendertype=abstract>
- Ruchala PL. Teaching new mothers: priorities of nurses and postpartum women. *J Obstet Gynecol Neonatal Nurs* [Internet]. 2000;29(3):265–73. Available from: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=10839575
- Arksey H, O'Malley L. Scoping studies: Towards a methodological framework. *Int J Soc Res Methodol Theory Pract*. 2005;8(1):19–32.
- Levac D, Colquhoun H, O'Brien KK. Scoping studies: advancing the methodology [Internet]. 2010 [cited 2021 Mar 15]. Available from: <http://www.cihir-irsc.ca>

13. Peters MDJ, Godfrey CM, Mclnerney P, Soares CB, Khalil H, Parker D. The Joanna Briggs Institute Reviewers' Manual 2015: Methodology for JBI Scoping Reviews. Joanne Briggs Inst [Internet]. 2015;1–24. Available from: http://joannabriggs.org/assets/docs/sumari/ReviewersManual_Mixed-Methods-Review-Methods-2014-ch1.pdf
14. Moher D, Shamseer L, Clarke M, Ghersi D, Liberati A, Petticrew M, et al. Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. *Syst Rev*. 2015;4(1).
15. Peterson J, Pearce PF, Ferguson LA, Langford CA. Understanding scoping reviews: Definition, purpose, and process. *J Am Assoc Nurse Pract*. 2016;1–5.
16. Ciliska D, Thomas H, Buffett MK. An Introduction to Evidence-Informed Public Health and A Compendium of Critical Appraisal Tools for Public Health Practice (Revised). Natl Collab Cent Methods Tools [Internet]. 2012; Available from: www.nccmt.ca
17. Scottish Intercollegiate Guidelines Network. (SIGN). A guideline developer's handbook. [Internet]. Edinburgh: SIGN; 2019 [cited 2021 Apr 19]. Available from: www.sign.ac.uk
18. Elm E von, Altman DG, Egger M, Pocock SJ, Gtzsche PC, Vandenbroucke JP. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) Statement: guidelines for reporting observational studies. *Bull World Heal Organ*. 2007;85(11):867–72.
19. CASP. Critical Appraisal Skills Programme (CASP) Qualitative Studies Checklist [Internet]. 2018 [cited 2021 Apr 19]. Available from: https://casp-uk.b-cdn.net/wp-content/uploads/2018/03/CASP-Qualitative-Checklist-2018_fillable_form.pdf
20. Merritt TA, Pillers D, Prows SL. Early NICU discharge of very low birth weight infants: A critical review and analysis. *Semin Neonatol*. 2003;8(2):95–115.
21. Chiodi LC, Del Angelo Aredes N, Scochi CGS, Fonseca LMM. Health education and the family of the premature baby: an integrative review. *ACTA Paul Enferm*. 2012;25(6):969–74.
22. Smith VC, Hwang SS, Dukhovny D, Young S, Pursley DM. Neonatal intensive care unit discharge preparation, family readiness and infant outcomes: connecting the dots. *J Perinatol* [Internet]. 2013;33(6):415–21. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/23492936>
23. Pennell C, Whittingham K, Boyd R, Sanders M, Colditz P. Prematurity and parental self-efficacy: The Preterm Parenting & Self-Efficacy Checklist. *Infant Behav Dev* [Internet]. 2012;35(4):678–88. Available from: <http://dx.doi.org/10.1016/j.infbeh.2012.07.009>
24. Cho J-Y, Lee J, Youn YA, Kim SJ, Kim SY, Sung IK. Parental concerns about their premature infants' health after discharge from the neonatal intensive care unit: a questionnaire survey for anticipated guidance in a neonatal follow-up clinic. Vol. 55, *Korean Journal of Pediatrics*. 2012. p. 272.
25. Burnham N, Feeley N, Sherrard K. Parents' Perceptions Regarding Readiness for Their Infant's Discharge from the NICU. *Neonatal Netw*. 2013;32(5):324–34.
26. Boykova M. Life After Discharge: What Parents of Preterm Infants Say About Their Transition to Home. *Newborn Infant Nurs Rev* [Internet]. 2016;16(2):58–65. Available from: <http://dx.doi.org/10.1053/j.nainr.2016.03.002>
27. Ingram J, Blair PS, Powell JE, Manns S, Burden H, Pontin D, et al. Preparing for Home: a before-and-after study to investigate the effects of a neonatal discharge package aimed at increasing parental knowledge, understanding and confidence in caring for their preterm infant before and after discharge from hospital. *Heal Serv Deliv Res* [Internet]. 2016;4(10):1–114. Available from: <https://www.journalslibrary.nihr.ac.uk/hsdr/hsdr04100/>
28. March of Dimes, PMNCH, Save the Children, WHO. Born too soon: the global action report on preterm birth. Eds CP Howson, MV Kinney, JE Lawn. World Health Organization. Geneva; 2012.
29. Bliss. Going home The next big step [Internet]. 2012. Available from: www.bliss.org.uk
30. US Department of Health and Human Services. Transitioning Newborns from NICU to Home: Family Information Packet. Agency for Healthcare Research & Quality; 2013.
31. National Association of Neonatal Nurses. Baby Steps to Home: A Guide to Prepare NICU Parents for Home. 2014.
32. McMaster Children's Hospital. Information for parents of preterm babies less than 30 weeks gestation [Internet]. 2007. Available from: <https://www.hamiltonhealthsciences.ca/wp->
33. American Academy of Pediatrics. Hospital Discharge of the high-risk neonate: Committee on fetus and newborn. *Pediatrics*. 2008;122(5):1119–26.
34. Ministry of Health Malaysia, Division of Family Health Malaysia. Neonatal Care. In: *Perinatal Care Manual*. 3rd edition. 2013.
35. Purdy IB, Craig JW, Zeanah P. NICU discharge planning and beyond: Recommendations for parent psychosocial support. *J Perinatol* [Internet]. 2015;35(S1):S24–8. Available from: <http://dx.doi.org/10.1038/jp.2015.146>
36. Blencowe H, Cousens S, Oestergaard MZ, Chou D, Moller AB, Narwal R, et al. National, regional, and worldwide estimates of preterm birth rates in the year 2010 with time trends since 1990 for selected countries: A systematic analysis and implications. *Lancet* [Internet]. 2012;379(9832):2162–72. Available from: [http://dx.doi.org/10.1016/S0140-6736\(12\)60820-4](http://dx.doi.org/10.1016/S0140-6736(12)60820-4)

37. D'Agostino JA, Gerdes M, Hoffman C, Manning M Lou, Phalen A, Bernbaum J. Provider use of corrected age during health supervision visits for premature infants. *J Pediatr Heal Care* [Internet]. 2013;27(3):172–9. Available from: <http://dx.doi.org/10.1016/j.pedhc.2011.09.001>
38. Howson CP, Kinney MV, McDougall L, Lawn JE. Born Too Soon: Preterm birth matters. *Reprod Health*. 2013;10(Suppl 1).
39. World Health Organization. Managing newborn problems: a guide for doctors, nurses and midwives. Integrated management of pregnancy and childbirth. World Health Organization. Geneva. 2003.
40. Jefferies AL. Going home: Facilitating discharge of the preterm infant. *Paediatr Child Health* [Internet]. 2014;19(1):31–42. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/24627654>
41. Teune MJ, Bakhuizen S, Bannerman CG, Opmeer BC, Van Kaam AH, Van Wassenaer AG, et al. A systematic review of severe morbidity in infants born late preterm. *Am J Obstet Gynecol* [Internet]. 2011;205(4):374.e1-374.e9. Available from: <http://dx.doi.org/10.1016/j.ajog.2011.07.015>
42. Pereira NMD, Verma RJ, Kabra NS. Postnatal lactational counseling and neonatal weight pattern. *Indian Pediatr*. 2015;52(7):579–82.
43. Weisband YL, Keim SA, Keder LM, Geraghty SR, Gallo MF. Early Breast Milk Pumping Intentions Among Postpartum Women. *Breastfeed Med* [Internet]. 2017;12(1):28–32. Available from: <http://online.liebertpub.com/doi/10.1089/bfm.2016.0142>
44. Bonet M, Forcella E, Blondel B, Draper ES, Agostino R, Cuttini M, et al. Approaches to supporting lactation and breastfeeding for very preterm infants in the NICU: A qualitative study in three European regions. *BMJ Open*. 2015;5:1–9.
45. Thomas J a. A parent's guide to bottle feeding your premature baby. *Adv Neonatal Care*. 2007;7(6):319–20.
46. Ministry of Health Malaysia. Guide to safe handling and giving feeding in care centres and nurseries. 2012.
47. Ministry of Health Malaysia. Guide to use of polycarbonate feeding bottle. Food Safety and Quality Division [Internet]. Ministry of Health Malaysia; 2011. Available from: <https://www.moh.gov.my/moh/attachments/5942.pdf>
48. Gardner SL. parent education prior to discharge of the late preterm or term newborn. *nurse Curr*. 2011;5(6):1–10.
49. Phillips RM, Goldstein M, Hougland K, Nandyal R, Pizzica A, Santa-Donato A, et al. Multidisciplinary guidelines for the care of late preterm infants. *J Perinatol* [Internet]. 2013;33:S5–22. Available from: <http://www.nature.com/doi/10.1038/jp.2013.53>
50. Gelmetti C. Skin cleansing in children. *J Eur Acad Dermatology Venereol*. 2001;15(SUPPL. 1):12–5.
51. Fernández D, Antolín-Rodríguez R. Bathing a Premature Infant in the Intensive Care Unit: A Systematic Review. *J Pediatr Nurs* [Internet]. 2018;42:e52–7. Available from: <https://doi.org/10.1016/j.pedn.2018.05.002>
52. Wolke D, Bilgin A, Samara M. Systematic Review and Meta-Analysis: Fussing and Crying Durations and Prevalence of Colic in Infants. *J Pediatr* [Internet]. 2017;185:55-61.e4. Available from: <http://dx.doi.org/10.1016/j.jpeds.2017.02.020>
53. Roberts DM, Ostapchuk M, O'Brien JG. Infantile colic. *Am Fam Physician*. 2004;70(4):735–40.
54. Watson A. Understanding neurodevelopmental outcomes of prematurity: education priorities for NICU parents. *Adv neonatal care*. 2010;10(4):188–93.
55. Ferber SG, Feldman R, Kohelet D, Kuint J, Dollberg S, Arbel E, et al. Massage therapy facilitates mother-infant interaction in premature infants. *Infant Behav Dev*. 2005;28(1):74–81.
56. Gyrol A, Polat S. The effects of baby massage on attachment between mother and their infants. *Asian Nurs Res (Korean Soc Nurs Sci)*. 2012;6(1):35–41.
57. Grazel R, Phalen AG, Polomano RC. Implementation of the American Academy of Pediatrics recommendations to reduce sudden infant death syndrome risk in neonatal intensive care units: An evaluation of nursing knowledge and practice. *Adv neonatal care*. 2010;10(6):332–42.
58. Forsythe PL, Maher R, Kirchick C, Bieda A. SAFE discharge for infants with high-risk home environments. *Adv Neonatal Care*. 2007;7:69–75; quiz 76–7.
59. Brooks JL, Holdtich-Davis D, Docherty SL, Theodorou CS. Birthing and Parenting a Premature Infant in a Cultural Context. *Qual Health Res*. 2016;26(3):387–98.
60. Sutan R, Berkat S. Does cultural practice affects neonatal survival- a case-control study among low birth weight babies in Aceh Province, Indonesia. *BMC Pregnancy Childbirth*. 2014;14(1):1–13.
61. Hishamshah M, Ramzan M, Rashid A, W Wan M, RH, NB. Belief and Practices of Traditional Post Partum Care Among a Rural Community in Penang Malaysia. *Internet J Third World Med*. 2010;9(2):1–9.