Nurses’ psychosocial work environment, parental needs and communication at the neonatal intensive care unit

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UNIVERSITY OF GOTHENBURG

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L'attention est la forme la plus rare et la plus pure de la générosité.

(Attention is the rarest and purest form of generosity.)

– *Simone Weil*

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ABSTRACT

Background. Parents with an infant in the neonatal intensive care unit (NICU) often experience great emotional distress. They are dependent on staff for help in caring for and relating to their infant. Nursing staff who care for vulnerable infants and their families are subject to stress and burnout. Insufficient research exists on psychosocial aspects of the NICU environment. The present studies aimed at (1) describing needs of psychosocial support of parents of extremely premature infants at the NICU (2) describing registered nurses' perceptions of their psychosocial work environment in a level II NICU, a special care nursery for moderately ill infants and (3) in a level III NICU with severely ill infants requiring advanced intensive care and (4) designing and evaluating a training program in communication for NICU nurses and studying relationships between difficult communication and burnout among the nurses. ***Methods.*** *Study I:* Sixteen interviews with parents of extremely premature infants were analyzed with inductive content analysis. *Studies II and III:* In each study, thirteen semi-structured interviews with registered nurses were analyzed using qualitative content analysis and thematic analysis, respectively. *Study IV:* Twenty-nine nurses participated in a new case-based communication course. Participants' experiences of communication with parents and their degree of burnout were assessed. Communication skills were assessed before and after the course and at four-month follow-up. ***Results.*** *Study I:* Parents needed various forms of emotional support, where nursing staff had a key role. Further, parents needed to be able to maintain trust in the NICU and its staff. Parents struggled with perceived pressure to spend more time at the hospital and with the limited privacy of the NICU. *Study II:* Sources of stress included high workload, the emotional intensity of work and inexperienced nurses' unfamiliarity with neonatal care. Nurses valued support from colleagues and educational opportunities. *Study III:* High staff turnover, with many inexperienced nurses, was described as stressful and negatively affecting group cohesion. While some were very satisfied with the workplace atmosphere, others described a negative climate and incivilities directed at new nurses. *Study IV:* High burnout scores were associated with communication-related difficulties. The course significantly improved participants' confidence in their communication skills in challenging situations.

Participants evaluated the course as highly interesting and important for their work. ***Conclusions.*** Parents of extremely premature infants in the NICU have complex, varied needs of psychosocial support. To meet parents' needs, nurses need sufficient time, support and training. Organizations should give attention to the needs of support of both inexperienced and experienced nurses, and to the emotional strain of nurses' work. Collegial social support and group cohesion should be fostered. NICU nurses experience communication with parents as important and rewarding but also stressful. They benefit from communication training addressing the specific communication challenges of their work.

Keywords: Burnout, Communication, Industrial/organizational psychology, Job satisfaction, Neonatal intensive care units, Nurses, Psychosocial needs, Social support, Stress

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SAMMANFATTNING PÅ SVENSKA

Bakgrund

Neonatala intensivvårdsavdelningen (Neo-IVA) är en intensiv och medicinskt högspecialiserad vårdmiljö. Föräldrar vars barn vårdas på Neo-IVA upplever ofta en stark stress och ett känslomässigt lidande, och de är beroende av vårdpersonal för hjälp och stöd i att lära sig vårda och relatera till sitt barn. Vårdpersonalen, som har ett stort ansvar i att ta hand om de sårbara patienterna och deras familjer, är ofta utsatta för stress och potentiell burnout. Forskningen gällande psykosociala aspekter i neonatalvården, ur vårdpersonalens såväl som föräldrarnas perspektiv, är begränsad.

Metoder

Studie I: Sexton intervjuer med föräldrar till extremt för tidigt födda barn analyserades med induktiv kvalitativ innehållsanalys.

Studie II: Tretton individuella intervjuer med sjuksköterskor på neonatal familjevårdsavdelning analyserades med kvalitativ innehållsanalys.

Studie III: Tretton individuella intervjuer med sjuksköterskor på neonatal intensivvårdsavdelning analyserades med tematisk analys.

Studie IV: Tjugonio sjuksköterskor och undersköterskor/barnsköterskor deltog i en ny fallbaserad kommunikationskurs. Deltagarnas upplevelser av kommunikation med föräldrar och grad av burnout skattades med enkätmetodik. Deras förmåga att hantera svåra kommunikationssituationer skattades före och efter kursen samt vid uppföljning efter fyra månader.

Resultat

Studie I: Föräldrar till extremt för tidigt födda barn behövde olika former av känslomässigt stöd på Neo-IVA. Avdelningspersonal hade en central roll i att ge detta stöd. Föräldrarna hade också ett behov av att kunna känna tillit till avdelningen och dess personal. Brister i kommunikation och organisatoriska problem kunde skada tilliten. Vidare behövde föräldrarna stöd i att finna balans mellan att vara närvarande på avdelningen med sitt barn och andra

förpliktelser. De upplevde bristen på privata utrymmen på avdelningen som ett problem.

Studie II: Den höga arbetsbelastningen, arbetets känslomässiga krav och oerfarna sjuksköterskors begränsade kunskap om neonatalvården utgjorde källor till stress. Sjuksköterskorna uppskattade stödet som de fick från kollegor, men detta kunde begränsas av arbetet i enskilda familjerum. Verksamheten erbjöd stöd i form av bl. a. tillfällen till fortbildning.

Studie III: Hög personalomsättning, med en stor andel oerfarna sjuksköterskor, beskrevs som en orsak till stress, med en negativ inverkan på sammanhållningen i arbetsgruppen. En del sjuksköterskor var mycket nöjda med stämningen på arbetsplatsen, medan andra beskrev ett negativt klimat och ohövligt beteende från några erfarna sjuksköterskor mot nyanställda kollegor.

Studie IV: Deltagarnas grad av burnout korrelerade signifikant positivt med upplevelsen av kommunikationsrelaterade svårigheter, inklusive brist på tid för kommunikation med föräldrar. Kursen förbättrade deltagarnas tilltro till sin egen förmåga att hantera olika svåra kommunikationssituationer i arbetet på neonatalavdelningen. Deltagarna beskrev kursens innehåll som mycket intressant och praktiskt användbart i deras arbete.

Slutsatser

Föräldrar till extremt för tidigt födda barn som vårdas på Neo-IVA har komplexa och varierande behov av psykosocialt stöd. För att uppfylla dessa behov behöver vårdpersonalen tillräckligt med tid, stöd och utbildning. Sjukvårdsorganisationer bör uppmärksamma de stödbehov som såväl oerfarna som erfarna sjuksköterskor har, samt den känslomässiga stress som sjuksköterskor utsätts för i sitt arbete. Kollegialt socialt stöd och sammanhållning i arbetsgruppen bör främjas. Vårdpersonal på Neo-IVA upplever kommunikation med föräldrar som en viktig och givande del av sitt arbete, men också som stressfyllt. De har nytta av kommunikationsträning som adresserar konkreta och specifika kommunikationssvårigheter som de möter i sitt arbete.

LIST OF PAPERS

This thesis is based on the following studies, referred to in the text by their Roman numerals.

I. **Bry, A,** Wigert, H. Psychosocial support for parents of extremely premature infants in neonatal intensive care: a qualitative interview study.
BMC Psychology, 2019; 7.

II. **Bry, A,** Wigert, H. Stress and social support among registered nurses in a level II NICU. Journal of Neonatal Nursing, 2022; 28: 37–41.

III. **Bry, A,** Wigert, H. Organizational climate and interpersonal interactions among registered nurses in a neonatal intensive care unit: A qualitative study. Journal of Nursing Management, 2022; 30: 2031–2038.

IV. **Bry, A,** Wigert, H, Bry, K. Need and benefit of communication training for neonatal nurses. Under revision.

CONTENTS

ABBREVIATIONS IV
1 INTRODUCTION 1
2 BACKGROUND 2
2.1 Psychosocial work environment 2
2.2 Stress and the work environment 4
2.3 Stress and burnout 5
2.4 Neonatal intensive care 6
2.5 Becoming a parent in the NICU 7
2.6 Patient-centered care 9
2.7 Family-centered neonatal care 10
2.8 Nurses' work environment 12
2.9 Families and staff within the NICU as a system 13
3 AIMS 15
4 METHODS 16
4.1 Study I 16
4.2 Study II 17
4.3 Study III 18
4.4 Qualitative analysis methods 19
4.5 Study IV 20
4.6 Ethical considerations 22
5 RESULTS AND DISCUSSION 24
5.1 Study I 24
5.2 Study II 28
5.3 Study III 30
5.4 Study IV 33
6 CONCLUSIONS 37
ACKNOWLEDGEMENTS 38

REFERENCES 39
STUDIES I–IV

ABBREVIATIONS

MBI	Maslach Burnout Inventory
NA	Nursing assistant
NICU	Neonatal intensive care unit
RN	Registered nurse
VAS	Visual analogue scale

1 INTRODUCTION

The ability to save the lives of premature and gravely ill newborns is one of the triumphs of modern health care and the result of a remarkable medical and technical development. Along with the development of medical and nursing interventions, the importance of parents' involvement in their child's care has been increasingly acknowledged, in neonatology as in other areas of pediatrics. Nursing staff at the neonatal intensive care unit (NICU) spend their professional life caring for infants whose medical condition is often complex and unstable, and at the same time for the infants' parents, who are going through a crisis in their lives. Not only medically, but also psychologically and socially, the NICU environment is a complex one, with numerous, diverse and often challenging interactions between staff and parents as well as among staff. Psychosocial support as well as training and education given to patients' parents are recognized as an essential part of NICU care. Good communication between staff and parents is a prerequisite for these activities. The necessity of a positive psychosocial work environment for nurses is likewise recognized. Nonetheless, these psychosocial aspects of NICU care have not received attention in research that is in proportion to their importance. The purpose of the present thesis is to shed light on several of these psychosocial aspects, from the perspective of parents as well as nurses.

2 BACKGROUND

2.1 PSYCHOSOCIAL WORK ENVIRONMENT

Over the history of industrial and organizational psychology, interest in the impact of work conditions on workers' well-being has gradually increased and developed (1). This development has often been prompted by historical events and social change. For example, in the United Kingdom, researchers' and others' growing concern about the strain and overwork to which industrial workers, including those in the munitions industry during World War I, were subjected led to the establishment in 1918 of the Industrial Fatigue Research Board (2). Likewise, the Great Depression of the 1930s led to a greater concern with the psychological impact of work (as well as of unemployment) on workers themselves and with the necessity of adapting working conditions to human needs (1).

Broadly speaking, the field of psychology as applied to the sphere of work has tended to be divided between two different perspectives. Originally, the branch termed industrial psychology addressed questions of so-called scientific management, including how psychological factors affected employees' productivity, performance and motivation as well as how personnel should be assigned to tasks based on their psychological qualities and personality (1). The focus was largely on an individual level. Later, during the second half of the twentieth century, researchers in what became known as organizational psychology focused on studying the organizational level, e.g. what kind of organizational structures and practices were advantageous for workers' well-being as well as for the results of their work.

In general, from about the 1970s, there was a shift from the idea that methods of increasing workers' satisfaction and motivation would make for well-functioning organizations to the idea that working within healthy organizations would promote the satisfaction and well-being of employees, who would thereby also perform better (1, 3). In other words, more responsibility for workers' well-being was attributed to organizations, and it was argued that

efforts to bring about change and development should be directed in the first place at organizations rather than the individuals they employed. At the same time there was an increase in researchers' critical scrutiny of the demands that organizations made of their employees, as opposed to psychological science being placed at the service of organizations that wish to maximize their profits and productivity by, as it were, making the best possible use of their employees (4). In more recent years, there has been a perceivable tendency back in the opposite direction, with a greater focus on psychological factors affecting workers on an individual level, for example on interventions that target individuals' ability to manage stress instead of identifying and trying to alleviate organizational causes of stress (5). This tendency has been criticized as unduly drawing attention away from organizational factors and organizations' responsibility for workers' well-being or lack thereof (6).

The modern development of research on the work environment has involved a union of the traditions of organizational and industrial psychology, and thus an integration of organization-level, group-level and individual-level perspectives (1). There is a need to keep these different angles in mind, not only in theory and research but also in practical efforts to form a positive work environment. Interventions to improve work environments and decrease stress can take place on various levels, and it is important that one level is not targeted to the exclusion of others that may be at least as relevant. For example, it is one-sided to try to improve workers' well-being purely by interventions to help workers learn to manage stress, while not addressing possible organizational contributors to the excessive stress (5).

The psychosocial work environment designates those work conditions that are psychological and/or social in nature or have a psychological impact on workers (7). It can thus be distinguished from the physical work environment, i.e. the physical conditions under which work is performed, such as ergonomics or exposure to hazardous substances or physical dangers (8). It should be noted that some physical conditions can have psychological effects and can thus be pertinent to studies of the psychosocial work environment. For example, the layout of work spaces can affect employees' concentration, interactions with each other, and so on.

2.2 STRESS AND THE WORK ENVIRONMENT

Models for describing and evaluating the psychosocial work environment are often based on the idea of a balance between positive and negative aspects of the work environment (9). An influential theoretical framework for understanding occupational stress is the job demands–control model first proposed by Karasek in 1979 (10). The central idea of this model is that control and the freedom to make decisions concerning one's work act as a "buffer" against the stress caused by the various demands of the job. One of Karasek's points was that high job demands combined with high control may represent a more satisfying, because more stimulating, situation for workers than simple, low-demand jobs with a low degree of control. This idea has been both supported and questioned (11).

Empirical evidence for Karasek's model has been mixed, which may in part be due to disparate ways of operationalizing and measuring demands and control as well as to the paucity of longitudinal studies (11). Modifications of the original demands–control model have been proposed in order to take more account of factors including workers' individual characteristics and resources such as workplace social support (11). One important version is the demands–resources model developed by Demerouti and her colleagues (12). According to this model, workers' ability to perform their job without harmful stress requires job demands to be balanced by appropriate and sufficient resources to deal with these demands. Excessive demands exhaust workers' energy, while a lack of resources undermines their motivation (12). Resources thus not only counteract stress but have a positive role as motivators (12, 13). Resources include both those that are external to the worker, such as the support and help of coworkers and managers, and those that are internal, such as possession of professional competence or adaptive coping mechanisms for dealing with stress. Demands, for their part, are not necessarily negative in character, according to this model. Whether they perceive demands only as burdens or in more positive terms can to some extent affect workers' ability to cope with them.

Research has more consistently found evidence to support the demands–resources model than the original demands–control model (11). It may be that

the demands–resources model is easier to study as specific job demands can more easily be matched and weighed against the resources needed to be able to fulfill them (9).

As alluded to above, the magnitude of the demands and resources made by a job is in part dependent on workers' perceptions and interpretations of their work environment. Research on psychosocial work environment can encompass, in varying degrees, both working conditions as observable "from outside" (e.g. the number of staff available at a workplace or their working hours) and the way these are psychologically experienced by workers (6). As discussed above in connection with individual versus organizational perspectives on the work environment, it is important to keep both these perspectives in mind, without ignoring either the "objective" or "subjective" side or conflating the two (5, 7).

2.3 STRESS AND BURNOUT

There is strong evidence of the association between excessive work-related stress and the incidence of a variety of psychological and somatic disorders (14, 15). Burnout is a way of describing stress-related psychological ill-health that has been widely discussed since the 1970s (16). Originally the term referred to a weariness, disengagement and negative feelings replacing, over time, the energy and sense of meaning with which a person originally set out to do a job. To begin with, the term of burnout was applied particularly to people working in human service professions, including health care, who had become psychologically exhausted through the stress of working as professional helpers. The most widely used conceptualization of burnout, developed by Christina Maslach and her colleagues (17), is tripartite, consisting of emotional exhaustion, cynicism (also known as depersonalization) and diminished personal accomplishment (also known as professional inefficacy). Up to now, exhaustion has been the most widely studied of these dimensions. In some cases, the dimension of exhaustion has been focused on to the exclusion of the other two, partly in an attempt to simplify the assessment of burnout (16). However, Leiter and Maslach (18) argue that although

exhaustion is a crucial dimension of burnout, the other two dimensions should not be neglected, since they capture better the negative emotional change in one's relation to work and the people one works with that characterizes burnout. According to this view, burnout implies something more than being extremely tired or overworked. Recent research has attempted to distinguish between different burnout profiles, where one or another of the three dimensions predominates (18, 19). For example, the experience and symptoms of a health care professional who feels overworked but still finds work fulfilling differ from those of one who has grown cynical and lost faith in the meaningfulness of his/her work, though both can be described as suffering from burnout (19).

To date, more evidence exists for situational than for individual factors as causal explanations for the development of burnout (16, 20). In other words, there is more evidence that a negative work environment contributes to burnout than that workers' personal qualities render them more or less vulnerable to burnout. Elements of the work environment that are associated with burnout include excessive workload, insufficient control, insufficient reward and recognition, and experiencing negative social interactions or unjust treatment in the workplace (16, 21).

The presence of burnout does not necessarily imply a psychiatric disorder in the sense of an inability to function in one's routine at work or outside work; rather, burnout is a continuum with clinically significant impairment at one extreme (19). Nevertheless, even a degree of burnout that allows the sufferer to keep working as before through the use of coping strategies may have significantly detrimental effects on job performance and thus, in health care, for the quality of care (20)

2.4 NEONATAL INTENSIVE CARE

Premature and sick newborn infants are cared for from birth in a neonatal intensive care unit (NICU). Those who are most premature or severely ill are at first cared for in a level III NICU, which has the capacity to provide

continuous life support, respirator treatment and neonatal surgery (22). When the infants are more mature and no longer need respirator treatment, they can be transferred to a special care nursery (level II NICU), where they may receive various types of therapies (such as continuous positive airway pressure, supplemental oxygen or antibiotics) depending on their condition, as well as nutrition to optimize their growth, in preparation for being able to go home. Infants who are born closer to term or whose illness is less severe can be cared for in a level II NICU from birth until their discharge from the hospital.

With advances in neonatal care, the outcomes of extremely premature infants and term infants with life-threatening conditions have greatly improved. These advances include: greatly improved methods for stabilization of premature infants after birth; careful resuscitation procedures; adequate parenteral and enteral nutrition; surfactant administration for the treatment of respiratory distress syndrome; development of respiratory care (including continuous positive airway pressure [CPAP] and various forms of respiratory therapy); temperature regulation; cardiac surgery for congenital heart diseases; and the treatment of pulmonary hypertension with nitric oxide and extracorporeal membrane oxygenation (ECMO) (23).

2.5 BECOMING A PARENT IN THE NICU

The hospitalization of a newborn infant in the NICU is usually an unexpected event for the parents and can cause profound emotional distress (24). This is especially the case for parents of the most premature or severely ill infants, whose prognosis in both the short and the long term is often highly uncertain (25). Parents of infants in the NICU are susceptible to depression, anxiety and traumatic stress, not infrequently to a clinically significant degree (26, 27).

A special feature of neonatal intensive care as compared to other forms of pediatric care is that the infant's stay in the NICU occurs in the very beginning of his or her life, before the relationship between parents and child has had time to form. Commonly, parents whose infant has been hospitalized in the NICU have reported difficulties in feeling like parents and bonding

emotionally with their infant (28, 29). Parents' emotional turmoil and the different appearance and behavior of premature infants compared to term infants, as well as the unfamiliar, highly technological and stressful environment of the NICU, can all contribute to making it harder for parents to relate to their child (30, 31). There is some evidence that these difficulties can affect later parent–child interactions, especially in those cases where parents have experienced severe distress during their child's hospitalization (25).

Nurses in the NICU have an important pedagogical role with regard to parents (32). Close collaboration between nurses and parents is essential for the parents to learn to understand their infant's signals and needs and to gradually become accustomed to caring for him or her independently. Contact and closeness with their infant are necessary for parents to develop an emotional bond with him or her, and for this too parents are dependent on NICU staff (33).

Given NICU parents' psychologically vulnerable situation and their need of guidance to learn to take care of their child independently, the quality of communication between parents and NICU staff is of great importance, as studies have repeatedly confirmed (34-36). At the same time, a number of conditions inherent to the NICU environment can make communication between parents and staff difficult and delicate. These include the possible seriousness or instability of the infant's medical condition, the emotional state of parents but also of staff, and the number of different staff members with whom parents interact (37).

Different countries have followed different traditions when it comes to allowing unrestricted family visits. Countries including the United States, the United Kingdom and Sweden have liberally allowed and encouraged family visits, whereas policies have traditionally been much more restrictive in Southern Europe (38). There are still significant differences among industrialized countries in the degree to which NICUs encourage, or even allow, unlimited parental presence, for instance overnight stays or presence at medical rounds (39).

2.6 PATIENT-CENTERED CARE

The importance, in nursing care, of taking into account patients' perspective and their needs as persons, including their emotional and social needs, has long been recognized. For example, in the mid-nineteenth century, Florence Nightingale instructed nurses on the importance of understanding the patient's perspective, in particular the deleterious psychological effects that illness and confinement have on patients (40). In her key work *Notes on Nursing*, she argued that nurses should make an effort to provide a soothing and attractive environment for patients, with sufficient variety to alleviate the dreariness and monotony of their condition. Nurses should adapt their behavior to the needs of the sick, communicating clearly and calmly with their tired and anxious patients:

> *"Let your thought expressed to them* [i.e. patients] *be concisely and decidedly expressed. What doubt and hesitation there may be in your own mind must never be communicated to theirs, not even (I would rather say especially not) in little things. Let your doubt be to yourself, your decision to them.* […] *A change of mind in others, whether it is regarding an operation, or re-writing a letter, always injures the patient more than the being called upon to make up his mind to the most dreaded or difficult decision. Farther than this, in very many cases, the imagination in disease is far more active and vivid than it is in health. If you propose to the patient change of air to one place one hour, and to another the next, he has, in each case, immediately constituted himself in imagination the tenant of the place, gone over the whole premises in idea, and you have tired him as much by displacing his imagination, as if you had actually carried him over both places"* (p. 31).

In the mid-twentieth century, the terms patient-centered or person-centered care began to be used to describe a style of nursing care that emphasized orientation towards the needs and desires of the patient as a person and the patient's active involvement and decision-making regarding his or her care (41). This was in contrast to a form of nursing centered around tasks or procedures performed on the patient, who was regarded as a more or less passive recipient of care (42). Patient-centeredness is often understood as striving to empower patients and encourage their autonomy and active participation in their own care as well as to respond with sensitivity to their

individual context, needs, values and preferences (43). This kind of care demands good listening and communication skills on the part of health care professionals (44). Pluut (43) makes the point that the various aims built into patient-centered care can sometimes be in tension with one another; for example, some patients may wish to surrender control and allow health care professionals to make decisions. Being active in decision-making and other aspects of their care can also be a challenging responsibility for patients (45).

2.7 FAMILY-CENTERED NEONATAL CARE

In many places, including Sweden, a family-centered model of neonatal care has been adopted in recent years, applying the principles of patient-centered care to a context where the patient is an infant and not yet autonomous (46). Family-centered neonatal care aims at fully involving parents in the care of their child. It entails the acknowledgement on the part of NICU staff that parents are their child's primary caregivers and should be treated as such, even while they temporarily have to collaborate with NICU staff in order to be able care for their child (47). Family-centeredness has several goals, including both better outcomes for infants and better psychological well-being for parents during their child's stay in the NICU (48). It is also intended to promote parents' bonding with their infant despite the unusual circumstances of hospitalization (49). Thus, in principle, family-centered care involves addressing parents' needs of psychological support as an integral part of the care given to the family (50). Interventions intended directly to ameliorate parents' psychological condition can include parent psychoeducation, treatment for psychological symptoms or, recently, interventions to improve parent–staff communication (48). The degree to which such support is actually available in practice varies (35, 49).

Family-centered care in the NICU is associated with shorter length of stay and greater parental satisfaction (51) and less parental stress (52). There is also evidence that it improves parents' bonding with their infants, although more rigorous studies are desirable (53).

Updated evidence-based guidelines for family-centered care in the NICU are given by Davidson and an international team (35). They include the following elements, which are of relevance as context for the studies in the present thesis:

1. Family presence, understood as families' unrestricted access to their infant. Evidence for parental presence is mainly descriptive or observational and has to do with what parents value and prefer.

2. Family support, including training parents in the care of their child and interventions to reduce parents' stress and anxiety. In the NICU, peer-to-peer support can also be offered by suitably prepared families with previous experience of their own as NICU parents.

3. Communication with family members, including training for staff in communication techniques.

In practice, different parental leave policies in different countries affect parents' ability to be present at the NICU. In Sweden, both parents are able to take paid leave from work when their infant is hospitalized, giving them greater practical freedom to spend time with him or her than is the case for parents in many other countries (54).

Nowadays, in designing the layout of NICUs, an effort is made to create physical conditions that allow for parents' presence, including sufficient privacy for extended periods of skin-to-skin care (50) and otherwise support the provision of family-centered care (48). Single-family rooms are one means of enhancing parents' ability to be with their infant at the unit. Apart from facilitating parental presence, single-family NICU rooms are thought to lead to shorter length of stay (55) and less spread of infection (56) than the traditional open-bay units. For these reasons, where possible, preference is often given to single-family rooms in planning the layout of new NICUs (57). Single-family rooms give parents an opportunity to stay at the NICU twenty-four hours a day while their infant is hospitalized. An observational study by Toivonen and colleagues showed a significant increase in nurse–parent interactions, which more than tripled in length, after the shift from an open-bay to a single-family room NICU (58).

Little research exists on the effects of family-centered neonatal care on nurses' experience of their work. A study by Coats et al. (59) showed that implementing family-centered care can feel like a "balancing act" for nurses in neonatal (or pediatric) intensive care units, given that this type of care requires nurses to adapt to being constantly at the service of families as well as to working in single-family rooms in relative isolation from colleagues.

2.8 NURSES' WORK ENVIRONMENT

A recent review of research from the United States on nurse work environments sums up the importance of nurses' work environment as follows:

> *"Promoting nurse empowerment, engagement, and interpersonal relationships at work is rudimental to achieve a healthy work environment and quality patient care. Healthier work environments lead to more satisfied nurses who will result in better job performance and higher quality of patient care"* (60).

Hospital nursing is often a highly demanding job associated with high rates of burnout (61). Studies consistently show a relationship between nurses' work environments and factors including nurse burnout and other mental health problems such as depression (62), retention of nurses (63) and nurses' experience of workplace violence (64). Evidence also exists that nurses' work environment has an impact on patients, being related to the incidence of adverse events, length of stay and the cost of care (65), patient satisfaction (63) morbidity and mortality (66).

In the NICU specifically, nurses may be more vulnerable to burnout than other professionals such as physicians (21). It is not only nurses themselves who are liable to suffer from a poor NICU work environment or benefit from a good one, but also the patients and families in their care; the importance of work environment factors such as teamwork and staff resilience for the quality of care delivered in the NICU is increasingly recognized and supported by empirical evidence (67). However, to date, little research exists on the particular psychosocial work environment of nurses in the NICU.

A recent report on the state of neonatal care in Sweden showed difficulties in hiring and retaining sufficient numbers of competent staff for the NICU (68). Limited numbers of registered nurses have led to some NICU beds having to be closed, especially over the summer months and in large cities. The degree of training of NICU staff, according to the report, also leaves something to be desired and has been reported to be inferior to that within other specialties such as adult intensive care. The current Swedish training program for specialist pediatric nurses has been criticized as not sufficiently oriented towards NICU nursing to equip nurses for this area.

2.9 FAMILIES AND STAFF WITHIN THE NICU AS A SYSTEM

A version of Bronfenbrenner's ecological systems theory adapted to the health care context (69-71) offers one means of illustrating the complexity of the NICU environment; see Figure 1. The closest level to the family, the microsystem, is made up of the family's direct interactions with NICU staff (as well as other personal contacts that occur outside the NICU). Interactions among those involved in caring for the family – in this case, NICU staff – form the next level, or mesosystem. This system has its own inherent complexity, comprising different professions and numerous forms of teamwork and communication. This level exists within a wider organizational level, or exosystem, the workings of which do not immediately involve the family but certainly have an impact on it, such hospital management. The organization in turn exists within a wider societal context, or macrosystem, with its policies, practices, attitudes, and their strengths and weaknesses that affect newborns and their position in society.

Each level affects those which it contains in numerous ways, so the influence of the apparently more remote elements on the family at the center can be great. The illustration is not intended to be exhaustive; elements of particular relevance to the studies in the present thesis are underlined (Figure 1). Some of these elements, such as interactions between parents and staff and those among staff, are directly explored by the studies in the present thesis. Others

are relevant as context: e.g. the job market for nurses in Sweden today is not in itself a subject of the present studies but certainly has implications for the recruitment of personnel for neonatal care and thus for the families and staff at the NICU. Another example of an important element of the macrosystem affecting Swedish NICU care is that generous parental leave policies, determined by legislation, make it possible for the parents to be at the hospital with their infant (54).

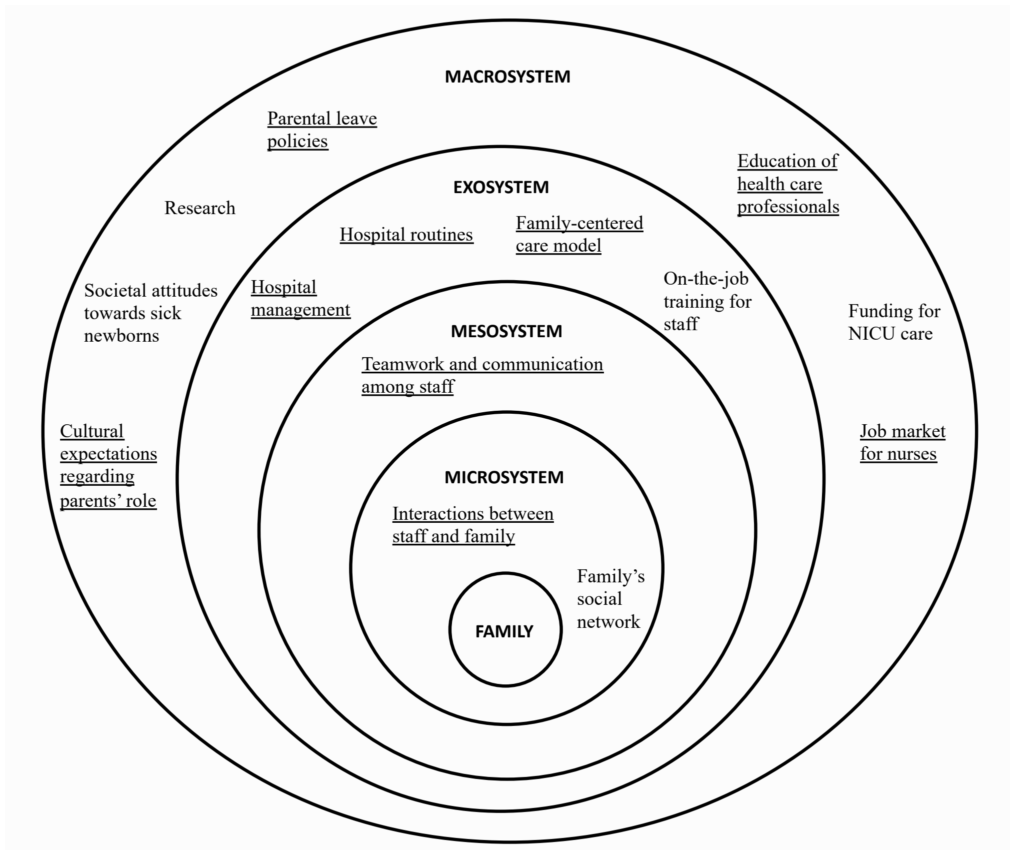

Figure 1. The NICU as a system, illustrated using Bronfenbrenner's Ecological Systems Theory. Elements of particular relevance to the studies in the present thesis are underlined.

3 AIMS

The overall aim of this thesis was to elucidate psychosocial factors affecting patients' parents and nursing staff in the NICU: specifically, parents' needs of psychosocial support, nurses' psychosocial work environment and nurse–parent communication. In the particular area of communication, the aim was also to investigate whether an educational program can support NICU nursing staff in their task of communicating with patients' parents.

Specifically, the studies aimed at answering the following research questions:

Study I:

What forms of psychosocial support do parents of extremely premature infants in the NICU report needing from the NICU and its staff?

In what respects do they report these needs as being met, or not, during their child's hospital stay?

Study II:

What sources of stress and of social support do registered nurses at a level II NICU experience in their psychosocial work environment?

Study III:

How do registered nurses at a level III NICU describe the organizational climate at their unit and interpersonal interactions within the work group?

Study IV:

Can an interactive communication course designed for NICU nurses improve their confidence in their skills in dealing with difficult communication with parents?

Is there a relationship between signs of burnout in the nurses and difficulties they experience with communication in the workplace?

4 METHODS

4.1 STUDY I

Participants

Sixteen families (comprising sixteen mothers and eleven fathers) whose infants had been born extremely prematurely and cared for at the NICU at a university hospital in Sweden participated. The infants had been hospitalized for between seven and 13 weeks in total (median 9 weeks). Of this time, they had spent from three to 11 weeks (median 4.5 weeks) at the level III NICU, before being transferred to a level II NICU for up to eight weeks (range 0–8 weeks, median 4.25 weeks).

Procedure

Open-ended interviews were conducted. The interviews were audio-recorded and transcribed verbatim.

Data analysis

Qualitative content analysis with an inductive approach was used to analyze the data (72). Initially, the interview transcripts as wholes were read through several times to obtain an overall sense of their content. Next, meaning units were identified in the text, condensed and coded. Codes were sorted into subcategories and categories, after which themes summarizing the meanings and implications of the categories in relation to the research questions were formed. During this process, the interview transcripts were frequently consulted to ensure an appropriate understanding of details in the data in relation to their context and the interview as a whole.

4.2 STUDY II

Participants

Thirteen nurses working at the level II NICU at a university hospital in Sweden participated in the study. The participants had experience of neonatal nursing ranging from three months to 38 years (median 2 years 9 months).

Procedure

Individual semi-structured interviews were performed. Each interview began by asking for an account of how the participant perceived positive and negative aspects of working at the unit. After this, participants were asked to describe a number of particular aspects of nurses' psychosocial work environment based on an interview guide. While each interview included all questions in the interview guide, participants were free to expand on what they felt were particularly significant topics; they were also asked if they had other comments or thoughts on their workplace not directly addressed by the interview guide. Follow-up questions were asked as needed. Data were collected until data saturation was attained.

Data analysis

Qualitative content analysis with an inductive approach according to the method described by Graneheim and Lundman (72) was performed. Meaning units relevant to the aim of the study were identified in the text and condensed to form shorter textual units, which were then labeled with code names. Coding initially included all data having to do with nurses' psychosocial work environment. Subsequently, the analysis focused on the data as it related to participants' perceptions of sources of stress and social support at the unit. Codes were then classified into categories, and finally themes answering the research questions were identified.

4.3 STUDY III

Participants

Thirteen registered nurses working at the level III NICU at a large university hospital in Sweden participated in the study. They had experience as NICU nurses ranging from 6 months to 27 years (median 6 years, mean 9.3 years).

Procedure

Semi-structured interviews were conducted by an interviewer external to the unit and previously unknown to the participants (the present author). Initially, each participant was invited to describe both positive and negative features of what working as a nurse at the unit was like. The interview went on to cover specific aspects of the psychosocial work environment. An interview guide was used. The aim was to gain a broad view of various aspects of the work environment while allowing the participant to expand freely on topics that were special importance or urgency for her.

Data analysis

Thematic analysis as described by Braun and Clarke (73) was performed. The software NVivo 2020 was used for organizing data. The interviews in their entirety were first read through several times to obtain an overall sense of their content. Coding was performed with an inductive approach and initially included all aspects of the psychosocial work environment that were described in the interviews. Codes were grouped according to their content, after which themes were generated based on patterns found among the codes.

4.4 QUALITATIVE ANALYSIS METHODS

Thematic analysis and qualitative content analysis are distinct methods by origin, but the approaches have many features in common. Thematic analysis has its origin in the social sciences (74) and is often used in qualitative studies in psychology as well as nursing studies. The version described by Braun and Clarke (73) has been particularly popular and is also used in study III in the present thesis. Qualitative content analysis was originally developed on the basis of quantitative content analysis. It can still include a quantitative component whereby occurrences of particular elements in the data are counted; this can be considered the most significant difference between thematic analysis and qualitative content analysis (75). As used in the present studies, the two approaches do not strikingly differ. The level of abstraction of the analysis in all three studies was fairly high and data were not quantified.

For ensuring quality of reporting, the Consolidated Criteria for Reporting Qualitative Research, or COREQ (76), were used in these qualitative studies (I-III).

Background of the researchers

The two authors of studies I–III had different professional backgrounds and thus brought different perspectives and pre-understanding to the studies. The present author is a trained psychologist without personal experience of working in the NICU (but with a degree of previous insight into the NICU due to family members who are neonatologists). The studies' second author, Helena Wigert, is a registered nurse with experience of NICU work as well as of professional supervision of NICU nurses. These different perspectives usefully complemented each other in the process of carrying out the studies.

4.5 STUDY IV

Participants

The twenty-nine participants were registered nurses and nursing assistants working at five different NICUs in Västra Götaland, comprising two level III NICUs and three level II nurseries.

Structure and content of the communication course

The course consisted of four three-hour workshops in a small-group seminar format. Basic communication principles and techniques were presented, including complicating factors and possible pitfalls specific to communication in the NICU context. The technique of empathic response in health care settings taught by Buckman and others (77) as well as von Thun's analysis of the different aspects of everyday communication (78) were among the theoretical underpinnings of the course. The main focus of the course was practical. A large proportion of the course time was devoted to interactive discussions of communication cases, where a dialogue between NICU staff and parents in a specific situation was discussed by participants from various points of view.

Study design

A quasi-experimental pre–post study design was used. Participants completed questionnaires before and after the course, as well as at follow-up four months after the course.

Before the course, the nurses completed the Swedish version of the Maslach Burnout Inventory, Human Services Survey (MBI-HSS) (17, 19). While other instruments for measuring burnout have been constructed (79), the MBI is by far the most studied and considered the "gold standard" for research on burnout, particularly in health and human service professions (80). The MBI-

HSS includes three subscales: Emotional Exhaustion, Cynicism and Professional Inefficacy. Participants also responded to several questions, on a visual analogue scale (VAS), concerning their experience of and attitudes towards communicating with families in their work.

Prior to the course, the nurses reported how confident they were of their ability to deal with various types of communication situations occurring in the NICU, on a questionnaire with questions on a VAS from 0–10. This questionnaire was repeated at the end of the course and four months after the course. The VAS questionnaires were previously tested for comprehensibility on a number of people with experience of working in the NICU setting.

After completing the course, participants were also asked to evaluate the helpfulness of the course in various areas of communication and the overall usefulness and interest of the course. Participants were also asked to comment in their own words on the course and what, for them, had been important lessons learned.

Data analysis

Pearson's correlation analysis was used to analyze relationships between burnout scores and data on participants' experiences of communication with parents. Communication skill scores before and after the course as well as before the course and at follow-up were compared using the Wilcoxon signed-rank test (two-sided). Wilcoxon is a non-parametric test for dependent samples, chosen because data were not necessarily normally distributed and because the questionnaire data on a visual analogue scale are arguably best treated as ordinal data (81). The remaining questionnaire data were analyzed with descriptive statistics. IBM SPSS Statistics was used to perform statistical analyses. Statistical significance was set at $p<0.05$ throughout.

To analyze participants' free-response comments on the course, qualitative content analysis (72) was used. The comments were transcribed, grouped into categories based on the similarity of their content, assigned names and illustrated with direct quotations.

4.6 ETHICAL CONSIDERATIONS

In all the studies in this thesis, the ethical requirements of the World Medical Association's Declaration of Helsinki (82) for research involving human subjects were adhered to. All participants gave their informed consent. Care was taken when writing up the results that individual participants could not be identified from the research articles. Ethical approvals and particular ethical considerations for the individual studies are detailed below.

Study I

Ethical approval was obtained from the Regional Ethics Committee in Västra Götaland (approval number: 696-13).

Certain precautions were taken because of the potentially distressing nature of the subject for parents of extremely premature infants. Parents whose child was deceased and those whose child had been remitted to habilitation services upon discharge from the hospital owing to severe disability were excluded from the study. The experiences of the parents thereby excluded would certainly be a relevant subject for study in itself, as noted in the Limitations section of the published article. However, both methodologically and ethically it would make sense to study these parents as a separate group.

The interviews were conducted in a place of the participants' choice (in practice, the home) several weeks to months after the child's discharge from the neonatal intensive care unit. Participation in the research study was thus clearly separated in time and space from the child's hospital stay, meaning that the risk of parents' seeing participation as in any way linked to their child's medical care was minimized. The researcher who conducted the interviews (Helena Wigert), who had experience of NICU nursing, had not been involved in care or present at the NICU during the child's hospital stay. All participants were asked at the end of the interviews how they had felt about being interviewed about their experiences. Feedback from parents was positive in all cases.

Studies II and III

The studies were approved by the Swedish Ethical Review Authority in an advisory opinion (approval number: 2019-02131).

One ethical consideration was the interviewer's relationship or lack thereof to the interviewees. The present author, who performed the interviews, had no other relationship with the persons interviewed. The other author of the study (Helena Wigert) was previously known to a number of the participants and was or had been involved in professional supervision of some of them. It was therefore felt to be more appropriate for her not to perform the interviews as there was potential for a conflict of roles.

It was also felt to be important both for ethical reasons and for the credibility of the results that the questions in the interview guide were posed in a neutral way that avoided hinting at a previous assumption of problems, or of strengths, in the work environment. There might otherwise be a risk that the interview itself might unduly affect participants' outlook on their workplace. On the other hand, it can be seen as beneficial to participants that the interviews encouraged them to reflect freely on various aspects of their work environment. This was something that a number of participants mentioned at the end of the interviews when asked, as all were, for feedback on how they had experienced being interviewed about their work environment.

Study IV

The study was approved by the Swedish Ethical Review Authority in an advisory opinion (approval number: 2020-03588).

Each participant devised a code (pseudonym) with which to label each completed paper questionnaire (before and after the course and at follow-up). Data were thus anonymous in a strict sense (unlike, for example, e-mailed questionnaires, which can be traced even if the questionnaires themselves are not marked).

5 RESULTS AND DISCUSSION

The aim of this thesis has been to elucidate a number of aspects of the psychosocial environment of the NICU that affect the nursing staff who work there and parents with an infant at the NICU. In the following section, a summary of the results of the four papers in the thesis will be integrated with discussion and commentary, in which implications of the studies are considered, the studies are related to each other and to previous research, and possible avenues for future research and development are suggested.

5.1 STUDY I

Analysis resulted in four themes describing parents' needs of psychosocial support and the manner in which these had been met during the family's hospital stay.

1. Emotional support, with three subthemes:

1A. Empathic treatment by staff

Parents needed communication with staff that was sensitive to their situation and emotionally supportive. Emotional support could be verbalized explicitly or transmitted e.g. through gestures or other nonverbal communication. Parents varied in the extent to which they wished to discuss their emotions directly. It was important to parents for information to be presented in a way that was sensitive to its emotional effects on parents; for example, framed in a way that did not focus excessively on risks.

For many parents, nursing staff, because of their familiarity and presence at the unit, were their primary source of emotional support among NICU staff. At the same time, parents felt that nursing staff often had too much else to do to be expected to respond to their need of emotional support.

1B. Other parents as a unique source of support

Other parents of premature infants were described as an important source of support. This could mean either parents who were at the NICU at the same time or those who had previous experience of the NICU and visited as part of the activities of the premature baby society. Parents with similar experiences were felt to possess a kind of understanding that could be found nowhere else. Some participants wished that the NICU had provided more opportunities for contact between those parents who desired it.

Peer-to-peer support, in the form of planned contacts with parents with previous experience of the NICU, is a recognized and recommended form of psychosocial support that has been found helpful for NICU families (35). New to our study is the significance to parents of informal contact with other families who have a child in the NICU at the same time, which to our knowledge has not been shown before. Of course, no parent at the NICU should feel pressure to interact with other families there. Nevertheless, it is good to be aware of the potential value of informal social support shared by families, so that those who wish to talk to each other have opportunities and spaces in which to do so.

1C. Unclear roles of the various professions

Emotional support at the NICU could be provided by members of different professions, including nursing staff, social workers, doctors or psychologists. The respective roles and responsibilities of the various professions were somewhat unclear to parents. For example, parents did not express a clear idea of what the indications for contact with a psychologist were and who (for example, parents or nursing staff) should normally take the initiative to suggest such a contact.

2. Feeling able to trust the health care provider

Maintaining a high degree of trust in the NICU and its staff was essential for parents to feel assured that their infant was in good hands, even when the parents themselves were absent from the unit. Parents were highly attuned to

incidents that seemed to them to indicate that they were not getting timely information about their baby's condition, or that staff themselves were poorly informed or had not communicated sufficiently among themselves, perhaps because of discontinuity in staffing. This kind of incidents tended to be remembered and to threaten parents' trust in the NICU.

Parents who are worried about their child's condition are understandably highly sensitive to breaches in communication with staff, whether or not these breaches are objectively harmful. This needs to be respected and an effort made as far as possible to avoid misunderstandings by skillful and effective communication. At the same time, it is worth noting the inherent demands of this type of communication from the point of view of staff, particularly nurses, who are themselves not responsible for such conditions as staff discontinuity or excess workload but who will tend to be exposed to parents' negative emotional reactions if such occur.

3. Support in balancing time spent with the infant and other responsibilities

A number of parents wished for greater support from NICU staff in balancing presence at the NICU with other responsibilities. They felt that staff, in encouraging them to spend as much time as possible with their infant at the NICU, did not always take into account the other responsibilities, such as care of children at home, that the parents had to manage. Some parents described positive experiences of staff helping them care for themselves and avoid exhaustion, while also explaining (and not merely asserting) the importance of being with their infant.

4. Privacy

Parents described a need of interludes of privacy and quiet in order to recover from the stressful environment of the NICU. Genuine privacy was difficult to obtain for parents at the NICU. This was the case also for parents who stayed

in single-family rooms, since the infant's medical needs necessitated nurses' access to the room irrespective of parents' need of private space.

Psychosocial support for families is seen as an essential component of family-centered neonatal care (50). That being so, there is a need to identify, on the one hand, what kind of psychosocial support families in the NICU need and, on the other hand, what nurses (and other professionals in the NICU) need to be capable of providing such support. Few nurses report having training in providing psychosocial support for parents (83, 84). Partly for this reason, it may not be easy for nurses to evaluate "how they are doing" in supporting parents. For example, Franck et al. (85) found a discrepancy in parents' and nurses' views on parental support in the NICU, where nurses felt they were giving more extensive support than parents reported receiving. On the other hand, nurses may have a persistent sense of inadequacy, of not "doing enough" for parents and of uncertainty as to whether they are responding appropriately to parents' difficulties (86). This was reflected in the results of study II described below.

The fact that supporting parents is a team effort involving numerous staff members of various professions is important to emphasize, and teamwork between professions in this regard is a potential area of development. Better-defined roles and more structured collaboration with professionals such as social workers and psychologists could lighten nurses' load and their sense of responsibility, especially in the case of the most distressed parents (84). It is important for nursing staff to know where their responsibility for supporting parents emotionally ends and should be taken over by mental health professionals. Previous research shows that NICU staff without psychiatric training are not necessarily able to identify parents in need of psychiatric services (87).

The importance of organizational factors and a satisfactory psychosocial work environment for NICU staff that became clear in this first study provided an impetus for the development of the subsequent studies in this thesis. Studies II and III directly explored registered nurses' perceptions of their psychosocial work environment, in two somewhat different contexts within neonatal care, namely a level II nursery with a single-family room layout and a level III intensive care unit with an open-bay layout. Study IV addressed communication between nurses and parents, an aspect of nurses' competence

which is sometimes neglected compared to more technical aspects of nurses' training and which can have important implications for both nurses' and parents' well-being. It approached the topic of communication in a way that attempted to take into account both staff and parent perspectives, e.g. ways in which good communication is of benefit to both (as opposed to, say, helping parents but constituting an additional burden for nurses).

5.2 STUDY II

Three themes representing sources of stress and three themes representing sources of social support were identified in the data.

Sources of stress (themes 1–3)

1. Inexperienced nurses' limited knowledge of neonatal care

Work at the unit was challenging and stressful for nurses with little or no previous experience. Working in single-family rooms was described as particularly challenging since it involved caring for patients and answering parents' questions in the absence of a colleague.

2. High and complex workload

Both experienced and inexperienced nurses described their workload as high and challenging. Teaching and advising younger colleagues was a task that added to experienced nurses' workload and whose magnitude was not always recognized, e.g. by management. Apart from the quantity of work, nurses had to juggle a wide variety of disparate tasks during their workday and were liable to frequent interruption. This demanded a great deal of their ability to prioritize and organize their work.

3. Emotional intensity of work

Contact with families' distress, and sometimes with the complexity and difficulty of their social situations, was described as a significant source of stress for the participants. This was the case although the infants at the unit were medically in a stable condition. Nurses felt a high degree of responsibility for the families in their care. Some nurses felt their workload was so high that they chronically lacked time and ability to do as much as they thought they should for families, which led to a sense of ethical stress.

Sources of social support (themes 4–6)

4. Support from peers: A valuable resource to build upon

Participants highly valued the fact that their colleagues at the unit were spontaneously and dependably helpful and supportive. This type of support was felt to be particularly vital for nurses who had not worked at the unit for long. Participants called attention to the fact that the physical layout of the unit tended to limit access to peer support, since colleagues were usually working in another room and could be difficult to locate.

As described in the Background section above, single-family rooms have advantages for providing family-centered care, are often preferred by parents and have been found beneficial for outcomes such as length of stay (51). Nevertheless, studies I and II in the present thesis show that single-family rooms can also have their disadvantages. Single-family rooms are not sufficient to ensure parental privacy, and they make work more difficult for inexperienced, and to some extent also more experienced nurses. Some other very recent studies have also identified both pros and cons of neonatal care in single-family rooms. For example, working in single-family rooms can increase nurses' emotional work (88), and parents and well as staff can feel a certain isolation (89). There is thus a need of considering how the difficulties that neonatal care in single-family rooms involves can be addressed.

5. Support from management: Mixed perceptions

A number of nurses described their first-line nurse managers as supportive and accessible (though less accessible for night nurses, who had little contact with their managers). However, managers had limited leeway for adapting the work situation of nurses who were experiencing unhealthy levels of stress. Some complained of high turnover among managers or of poor communication between managers and nurses (e.g. regarding families' complaints).

6. Formal support: Initiatives by the organization

Nurses at the unit had access to several kinds of formal support. For example, reflection sessions at the end of the day had been organized to allow staff members to discuss situations at the unit that were difficult or had a particular impact on them. This was felt to be helpful, although reflection sessions were only available on the day shift and did not fully supply the emotional support that might have been needed. Further, participants appreciated having access to a variety of opportunities for further education and professional development. But for the most experienced nurses, fewer avenues for further education and professional development were available.

5.3 STUDY III

Four themes elucidating the organizational climate and interpersonal interactions among nurses at the unit were identified.

1. High staff turnover as a source of stress and unease

High staff turnover gave nurses a feeling of insecurity and of not being familiar enough with their colleagues, including their colleagues' level and areas of competence, to be able to communicate and work together as well as they would have liked. For nurses who had been at the unit for a long time, it was

experienced as burdensome and unmotivating to have the task of supervising and teaching a series of recently hired colleagues who were likely to leave fairly soon in any case.

2. Seeking camaraderie in subgroups within the group

A tendency was perceived for nurses to form social groups with which they preferred to interact, within the work group as a whole. This was described as having both positive and negative sides. On the one hand, it increased nurses' job satisfaction to have a social group in which they felt comfortable. On the other hand, the tendency to form subgroups was seen as negatively affecting the cohesion of the group as a whole.

3. Atmosphere in the group: the good and the bad

There was a diversity of opinions regarding the atmosphere of the work group. Some described it as friendly and enjoyable. Others felt that a climate of negativity and unnecessary criticism all too often characterized the group.

4. Incivilities experienced by new nurses

A specific problem that was reported was the occurrence of incivilities directed by certain highly experienced nurses at nurses who had recently come to work at the unit. Different attitudes towards the incivilities were discernible among the participants. For some, incivilities were an important issue that could make the difference between staying and leaving for new nurses. Others tended to relativize the importance of the incivilities as something not very serious or as understandable given the stressfulness and high tempo of the NICU.

Like study II, study III highlights the question of the respective needs of support of inexperienced nurses, who face a steep learning curve and often great stress in coming to work at the NICU, and experienced ones, seen as "fixtures" at the workplace, who possess great competence but who may feel

neglected by comparison to the attention and support offered to newer colleagues.

The view was found in the data that a feeling of being neglected and unappreciated could lead very experienced nurses to develop a frustration which they took out on new colleagues in the form of uncivil behavior. The idea that resentment against organizational instability and a sense of not being appreciated as one deserves can be taken out on younger colleagues is an interesting one and could be further studied. Siegrist's effort–reward imbalance theory (90) might provide a helpful theoretical framework. The theory describes the negative emotional effects of feeling insufficiently rewarded and recognized for the work one does, and the resulting unhealthy stress. Effort–reward imbalance is associated with aggression, as well other negative emotional states (91, 92).

Another question which study III raises is how to organize work teams in such a way as to promote group cohesion and good teamwork, particularly in a situation where staff turnover is high and there are hindrances to nurses' getting to know each other on a professional as well as on a social level. An intervention that was under consideration at the unit studied was team-based scheduling, where a group of staff members work together on a regular basis (while losing some of their freedom to plan their individual schedules). The advantages and disadvantages of this system would be an interesting subject of further study.

Recently qualified nurses' vulnerability to stress and their need of training and support from peers and management is well-established in research (93) and not surprising considering the demands of their job. Studies II and III in the present thesis likewise underline the challenges that new nurses face despite the efforts of the organizations studied to support them. The NICU is a particularly challenging work environment for new nurses. They have to learn the specialized and high-responsibility task of caring for very vulnerable patients while also communicating and collaborating effectively both with parents at the unit and with coworkers of various professions. At the same time, studies II and III shed light on the fact that highly skilled and experienced nurses in the NICU also have particular needs of support and appreciation, an aspect that has received far less attention in previous research than the situation of recently graduated nurses. How to help nurses feel appreciated, "seen" and

supported is an especially crucial question in the non-optimal organizational situation of high turnover, difficulties in recruiting competent staff and the societal fact that the salaries of NICU nurses may not correspond adequately to the exacting and specialized work they perform.

5.4 STUDY IV

A summary of the main results is presented here. For a detailed account of the results, please refer to the manuscript reproduced below.

Baseline data

The participants were registered nurses and nursing assistants, the length of whose experience of their professions varied from one to 46 years. Few reported having previous communication training. Baseline questions revealed that participants felt communication with parents was very important to their job and often one that they enjoyed. On the other hand, communication also represented a source of stress and they often felt pressed for time in communicating. See Table 1 in the manuscript.

Burnout

While a considerable number of participants reported high Emotional Exhaustion and/or Professional Inefficacy, high scores on the Cynicism subscale of the Maslach Burnout Inventory were uncommon; see Table 2 in the manuscript. High burnout scores were significantly associated with reporting problems related to communication.

Effect of the intervention and participants' evaluations

Results showed a significant improvement of participants' self-reported communication skills, both overall skills as assessed by a general question and skills in various communication situations. See Table 3 in the manuscript.

Participants' evaluations of the course and its helpfulness, assessed both by quantitative and qualitative data, were highly positive. See Tables 4 and 5 in the manuscript.

Similarly to previous research on families in the NICU (34), study I showed the importance of small incidents, positive or negative, involving staff for parents' emotional condition at the NICU and their memories of their child's hospitalization. The results of study I highlight how important it is for communication between nurses and parents to be timely, clear and emotionally sensitive.

Parents in study I appreciated emotional support from nurses and often felt that nurses, because of their familiarity and regular presence at the unit, were the staff members they felt most comfortable talking to. However, they had a sense that nurses were often too busy to talk to them and could thus be hesitant to signal a need for support. From another angle, studies II and IV confirmed this impression of the parents. Despite the increased amount of interaction between parents and nurses that occurs in family-centered neonatal care, especially where families have their own rooms (58), the nurses in studies II and IV still felt they had too little time to communicate with parents and that this was a source of stress. A previous qualitative study reported similar results (84). It is possible that the bulk of the interaction between parents and nurses is devoted to information and practical matters, and that staff and parents feel time is still lacking for addressing other topics that they feel would be important to discuss. These might include such topics as parents' emotional state, their adjustment to their child's hospitalization, contextual/background factors that may make their situation more difficult, or their need of support before going home – in other words, the psychosocial side of neonatal care.

From nurses' point of view, good communication with parents is essential for collaboration with families. A sense of competence in this area of their work and confidence in being able to meet parents' needs as far as feasible are

important for nurses' own coping. Feeling insufficiently skilled in communicating with families can be a major stress factor for NICU nurses and lead to a burdensome sense of inadequacy in caring for families (86).

The results of the studies in this thesis, from different angles, point to the relevance of communication training for nurses. Study I, like previous studies (34, 94), underlined the value of empathic and thorough communication with NICU staff for the psychological well-being of parents. In view of the emotional effects of communication on nurses themselves (see the results of study II) it is appropriate for training that aims at teaching nurses to communicate well with parents also to address nurses' perspective. That is to say, how can nurses understand and cope with the emotional effects on themselves of communicating with parents about difficult matters on a daily basis, and how can good communication with parents make nurses' work more manageable and meaningful?

The communication course designed and evaluated in study IV is one example of an intervention that, by increasing nurses' professional competence and confidence in their skills, can contribute to a better ability to manage their workload and a more positive psychosocial work environment. The discussion of communication-related issues in itself was perceived by participants as a helpful opportunity and one that was not often available to them. This ties in to the results of study II, where participants found group reflection about difficult or unusual situations at the unit to be a valuable form of social support. The communication course studied here was highly focused on the kinds of situation that NICU nurses concretely encounter in their daily work, as opposed to communication principles on a general or theoretical level.

The studies in the present thesis have focused on parents' and nurses' own viewpoints and experiences, as opposed to descriptions of the NICU environment from an external point of view. Individual-level and group-level, as well as larger organizational aspects (for example, the effect of high staff turnover) have emerged in the studies in varying degrees. It is important to emphasize the fact that adequate organizational conditions have to exist for nurses to benefit from a positive psychosocial work environment and for parents in the NICU to be ensured the support they need. For example, mutual social support among staff cannot compensate for a lack of financial resources to hire sufficient numbers of staff; and highly competent communicators

cannot fully exercise this skill if their schedules allow them too little time to do so. Likewise, professional competence and a personal capacity to cope with emotional and other stressors are not a substitute for satisfactory organizational conditions as preventives against unhealthy levels of stress and burnout.

6 CONCLUSIONS

The results of the present thesis showed that parents in the NICU have complex and variable needs of support that may be more or less extensive and may differ from those of others in an apparently similar situation. NICU staff thus require a high degree of sensitivity and competence in order to support parents. At the same time, they require organizational conditions that allow staff enough time and training to perform this demanding aspect of their job. Teamwork among different professions in the NICU should also be built up for the purpose of improving the psychosocial support given to parents. Being continually in contact with parents in distress is emotionally stressful for NICU nurses, and this thesis draws attention to the importance of supporting nurses in supporting parents.

In a societal and organizational situation where the NICU struggles with high turnover and difficulties in recruiting competent staff, the importance of giving support to existing staff is accentuated. One dimension of this is promoting social support among nurses and group cohesion, which may require creative thinking, e.g. where the scheduling system or the layout of the unit are not immediately conducive to nurses' collegial interaction or group development.

While new nurses in the NICU are vulnerable to stress from a variety of sources, those with more experience can also feel a lack of appreciation, organizational support and professional development that organizations should recognize and address. Irrespective of their degree of experience, registered nurses and nursing assistants in the NICU need, appreciate and benefit from communication training that is closely related to the particular demands and possibilities of this exacting form of care.

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