"Resonance Based Medicine" as Mental Health Support in Neonatal Transport

Katalin Varga, Csilla Ördögh & Zsolt Somogyvári

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"The newborn is a sensitive person,
Just like his/her healthcare provider"

This chapter offers a practical guide for mental health professionals who intend to apply the method of resonance based medicine in the treatment of neonates and their families. During the performance of high-quality medical care, it builds on the emotions of the involved parties (newborn, health professionals, parents). This method is centered around incorporating psychological support based on positive suggestions and involves communicational strategies. It has been applied successfully in the work of the Neonatal Emergency and Transport System operated by the Peter Cerny Foundation. The purpose of this chapter is to provide a descriptive methodology of the good practice of 7 years' experience (20000+ transports), which can support the development process of any organization performing similar tasks.

Introduction

There is a growing body of studies investigating the concept of *emotional labor* and its application to the process of medical attendance. The term emotional labor means an organization's control over the emotional expressions of employee (e.g. flight attendants, waiters), prescribing the process of regulating displayed emotions during professional interactions to increase the clients' satisfaction, and the profit. *Emotional work* is the control of emotions, but in a private context – between family members and friends – for the sake of avoiding conflicts, pleasing the others, etc.

The term *emotional labor* has been mostly applied in only a certain field of the medical profession. Nurses work tasks has always included maintaining a caring relationship with patients, and studies have investigated its effect

on nurses' own emotional life and quality of service, however, there is still no consensus on what nursing care consist of on a theoretical and philosophical level, or how much of the work is about emotional presence (Mackinnon, McIntyre & Quance, 2003). As the new trend of family centered care has arisen (Altimier, 2015), emotional labor has become increasingly viewed as a useful, powerful tool of not only nurses but all types of medical professionals.

In the medical field, there is a change in the required set of competencies, needing more skill of a psychological nature. It is becoming clear that "physicians are more effective healers – and enjoy more professional satisfaction – when they engage in the process of empathy" (Larson & Yao, 2005: 1100). There is an alarming gap in proper training of emotional regulation in the field of medicine, forcing healthcare personnel (HCP) to rely merely on individual style and belief-system. Defining professional competence of physicians, Epstein and Hundert (2002) states that good competence is "*the habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily practice for the benefit of the individual and community being served*" (Epstein & Hundert, 2002: 226). Nevertheless, in its detailed description, there is no mentioning of the regulation of a physician's *own emotions*, unless emotional intelligence signifies that. Education preparing medical staff for the impact of their daily work is still deficient as regards the emotional toll that medical work implies. Cross-cutting educational guidelines are needed professionals can rely on. Instead of leaving emotional reaction (both inwards and outwards) to culturally constructed rules of conduct, a work guidance can assist professionals to regulate their own emotional reaction and also enhance therapeutic communicational skills.

The conventional or orthodox approach, that is, the wedge firmly driven between reason and emotion is fading (McCreight, 2005). Before, there was a view that rationality exists as somehow opposed to emotionality. As the revolution of affective sciences has clearly demonstrated, there is no rational process without emotional aspects, therefore, it is advisable to acknowledge, furthermore, consciously apply emotion during tasks that need rational problem-solving. As recent neurobiological research indicates, "emotions are central to all judgment and decision making, further

emphasizing the importance of assessing emotional intelligence and self-awareness in clinical practice" (Epstein & Hundert, 2002: 228).

We have chosen to apply the concept of *"resonance"* based on the work of the Watkins couple (Watkins & Watkins, 1986, 1990, 2000), according to whom applying resonance in therapy means that the therapist takes a dual perspective: on the one hand gets emotionally involved in the patient's experiences, but on the other hand keeps an objective distance. In this model a mutual resonance and ego-strength flow can be conceptualized within the therapist-patient dyad. This way the patient can be strengthened by the power shared by the therapist. This is a personal emotional *investment* on the part of the therapist, it is not "simply" being empathic with the patient (see on this Varga, 2013a). At the core of 'resonance-based medicine' there is emotional involvement, established and maintained through communication and compassion (sympathy and empathy). It can be used as a tool of healing in other professions as well, and so we have applied it in our work guidance for neonatal care. The concept is close to that of empathy, as described by Larson and Yao (2005), according to whom empathy involves many elements – like associating, resonance, and moods – guided by the emotions of the provider.

Expressing emotion can be viewed as no longer marginal (or even dysfunctional) in a medical context, but rather a resource to strengthen professional capabilities (McCreight, 2005). As Altimier (2015) states about neonatal care, „caregivers must understand that therapeutic affiliative relationships have especially important effects on psychological regulation in both parents and their infant" (Altimier, 2015: 36). Apart from the technical skills, the importance of non-technical skills is gradually recognized in intensive care in general, and in Perinatal/Neonatal Intensive Care Units (PICU/NICU) in particular. It is more and more seen as a new way of enabling better quality care, with better results of treatment. What is being recognized is that the relationship between the parties (the staff, the newborn and family members) is not only a factor but an opportunity to opt for better outcome (Altimier, 2015).

As for communication reflecting resonance based medicine, we have applied the rules of suggestive communication. There is a growing literature on the usefulness of *psychological support based on positive suggestions* (Kekecs & Varga, 2013; Varga, 2013b), in a wide variety of medical fields (Varga, 2011,

2015, 2017). That is why we provided verbatim model sentences, exemplifying what to say in certain situations, encouraging HCP to find and use their own verbalizations, keeping in mind the main laws of suggestions (Ewin, 2011; Hammond, 1990).

More than half a million babies are born immature each year in the United States. Very premature birth is an international challenge that HCP and families face all over the world.

Perinatal sciences discovered that perinatal experience fundamentally influences later health and well-being, even transgenerational effects are described (Alves et al, 2015; Dahlen et al, 2013, Feldman, 2015; Kenkel, Yee & Carter, 2014; Uvnäs-Moberg & Petersson, 2004). Intrauterine development is viewed as a process requiring the active participation of the fetus, and s/he is considered to be a competent participant in his/her development, is interactive, able to receive and send information, to initiate communication, and to think and hypothesize about the world surrounding him/her (DiPietro, 2010; DiPietro, Costigan & Voegtline, 2015; James, 2010). This means that the fetus has a certain understanding of the world, his/her experiences will leave a mark on his/her nervous system. The mother's role is viewed as offering the most ideal ecological environment for the fetus to develop in (Andrek et al, 2016; Entringer, Buss & Wadhwa, 2015), which role only gradually fades well after the physical birth of the baby. According to the WHO normal birth practical guide, the baby should not be removed from the mother in the first few hours after delivery, this way supporting the emotional encounter between mother and newborn.

Birth in itself is not an easy transition; premature birth contains even more challenges for the fetus, the mother, the father (and family). „Few human experiences approach the intensity of emotions, stress, anxiety, pain, and exertion that can occur during labor and birth" (Corbett & Callister, 2000: 71). Giving birth to a preterm infant is considered to be one of the most stressful situations for a human being. It is impossible for HCP to remain untouched by emotion, and their emotional involvement has an impact also on the family in care (Gallese, Eagle & Migone, 2007; Iacobony, 2009). As studies have shown, psychosocial dimensions have been proven to have more impact on birth outcome than atmosphere and décor (MacKinnon & MacKenzie, 1993).

Key problem

Treatment of the prematurely born usually means an abrupt separation of mother and baby. There is a higher risk of abrupt separation in neonatal emergency situations, for instance in delivery room resuscitation, and in case of transport of premature babies from the referral hospitals into the regional Neonatal Intensive Care Units (NICUs). The dedicated neonatal emergency and transport services, working as a Level-III mobile NICU, must have work instructions as well that describe not only resuscitation, stabilization and transport tasks of such working units, but these instructions should also provide, as much as possible, pain- and stress-free care and even facilitate early bonding. The Section of Transport Medicine (SOTM) of the American Academy of Pediatrics (AAP) has useful guidelines of Family Centered Care (FCC) that provide several useful tips for baby and child transport services ("Guideline Section", 2007).

Method

The background of methodological development

In Hungary's central region, within 100-120 kms of Budapest, the rescue and transport of premature babies and newborns has been performed by Peter Cerny Foundation since 1989. The Cerny mobile NICU service has provided more than 81,000 neonatal transport in total, with an average of 4000/year, including 800-1000/year respiratory support, and despite the different geographical, social and health conditions, has developed neonatal transport systems and achieved results similar to that of developed countries (Woodward & Somogyvári, 1997). From the very beginning, it has not only had medical care protocols, but has also put an active focus on the psychological needs of newborns and their parents in daily care routine (like making efforts to provide stress-free care, facilitating early skin-to-skin contact, providing an opportunity to say goodbye for both the mother and father since 1989, taking a photo of the baby for the mother prior to transport since 1995, etc.). The collaboration between the Neonatal Emergency and Transport System (NETS-PCA) operated by the Foundation and the Department of Affective Psychology of Eötvös Loránd University has been running since 2013, with a view to displaying a unified methodological system that incorporates the mental health needs of both newborns and

their families, as well as the medical staff, under the neonatal transport conditions.

The development process of the work guidance

The structure of our work instruction is based on the logic of linking psychological activities / needs to certain phases of the transport and use different techniques according to these specific needs. In the first phase of the development, the neonatal transport team's clinical observations stemming from direct contact with patients had to be brought into line with the theoretical and practical fundamentals of psychology. As a method, it took an interdisciplinary "brain storming" session, recorded and later analyzed, which helped us develop the guidance. This was followed by targeted literature research. Within the framework of a workshop, the interdisciplinary experts of the collaboration then formulated the work instructions based on the filtered data and professional experience. Subsequently, the work instruction was given out to neonatal team members, and after a 6-months period, was finalized with minor modifications. Continuous quality improvement is achieved through targeted peer review meetings held every six months. We aim at achieving a continuous improvement in staff communication skills and attitudes as a result.

Results

Psychological and mental health elements of Resonance Based Medicine (RBM) have been successfully incorporated into the practice of daily, evidence-based neonatal transport activities. The application of this procedure was carried out during the daily routine service in 19,872 cases between 1 January 2014 and 31 December 2018. Those receiving care from the NETS_PCA were, regardless of their age, premature and newborn babies and infants weighing less than 6 kg and not more than 60 cm, were needing interhospital transport and have received partly in-hospital (96%) and partly outside the hospital (4%) emergency care.

The great number of appreciative parents and partner hospitals can be considered as an indirect result of the successful implementation of medical care with emotional presence, proving the foundations of RBM successful.

As a result of the development of the mental health focused methodology, the emotional presence protocol of NETS-PCA has been serving as good clinical practice in the everyday routine care of neonatal transport. The developed guidance goes through all the steps of main objectives and also, some recommended techniques are provided, encouraging HCP to find their own personalized ways of utilizing it in the circumstances of neonatal transport and emergency situations. The full work instruction is available upon request, here we present the main points, with some specific illustrations for each.

The main steps of the mental health method with resonance based medical attendance:

1. Preparing for the field work before care is provided

1.1. Review current „concerns of life", and leave them behind, and thus clear the mind at the beginning of each workday.
Recommended Psychological Techniques for this:

- Make a list of/review current issues, daily problems in life (e.g. pipe burst at home, child's school paper, etc.)
- Do autogenic training exercises
- Use the "bookend" technique: things should have a start and an end; they should not coalesce. While changing for the ambulance uniform – and back at the end of the shift – there is an ideal possibility to bookend and make a clear mental shift between professional and private roles in life.

1.2. "Tuning oneself" to the case upon departure for a new call.

This should be carried out at the earliest opportunity (e.g. on the way to work), and besides turning attention to the new case, should include taking unfinished activities into account. This will minimize the accumulation of "tension caused by incompletion".

2. Patient care upon arrival to the referral hospital or a non-hospital site of emergency care

2.1. The first step involves a focused processing of the multitude of information provided by local medical staff of the referral hospital and an

assessment of the emotional atmosphere, the impulsivity of the environment (shouting, tension in the air) by rating (fast scoring scale) the emotional tone of the referral hospital ward between 1-5. The purpose of the scoring: a) to "ventilate" our negative feelings, b) to make oneself aware of arising inner feelings upon receiving the information and, if necessary, excluding them, while retaining the medical information!

2.2. Before the actual contact with the baby, the HCP (internally) checks the following points:

> *"I have excluded the outside world, and have gained all the available information;*
> *I have instructed the neonatal transport team colleagues, they know what to do;*
> *In light of the preceding events, I summarize the medical data and emotions;*
> *As I step beside the incubator I am fully and exclusively dedicated to the child."*

There is a so-called "3C technique" of a *Clean hand – Clear heart – Clear head*, which should be a repeated element during care services. HCP are well accustomed to clean their hands (either with water or with alcohol), so our suggestion is to make a link between the physical cleaning of the hands and at the same time an emotional and cognitive clearing of the heart and the mind.

A recommended technique (self-suggestion) for this: *"As my hands are getting clean, my heart and my head is also getting clear of everything that has no place in the here and now"* – The hand washing should be continued as long as it takes to arrive at the right emotional level.

2.3. When arriving to the incubator

Approach the patient and spend some time on focusing on the baby in care: "*I am calm, I am looking at the child, I clear my hand, my heart and my head, I tune myself to the child, I generate love".*

Formulate positive (internal) sentences like: *"the help has arrived".*

Caressing, making a contact with the child by a hand placed on or near to his/her head is advised at this stage.

Premature and sick newborns are also sensible human beings, who have the right to be informed, the right to be relieved of pain, fear and anxiety,

and accordingly, to be informed about the steps of the examination or treatment! For example:

> *"It is very difficult for you to breathe, which surely feels very bad, I will help you. This will take only a short time, and then it will be much easier. We will soon find your mother / father, you will soon meet again."*

It is necessary to explain the subsequent steps of care services if it is considered to be relevant for that child: *"We will sit in an ambulance van, it will cradle you, and there will be a pleasant temperature...; at the place we are going, people already know we are coming..."*

3. During procedures carried out in the incubator

While making the diagnosis or performing interventions, positive messages should be sent e.g. instead of sentences like: "*I will be the one to torture you*"; say: "*I came to help you;"* or instead of saying *"It will be unpleasant*"; say: "*You will feel it when…."*

4. After the incubator procedures

4.1. "3C technique" – Cleaning the hand, clearing the heart, and the head – for the second time.

4.2. Take a picture of the child.

4.3. Create physical contact between mother and child, preferably a skin-to-skin contact, including early breast feeding.

4.4. Take a picture of the mother/father, preferably together with the infant.

> *"We are leaving a picture of the* baby *here, and if you like, we can also take a picture of yourself /yourselves which can be with him/her in the incubator all the while."*

If yes: only the mother or the mother and the father together may appear on it. We can encourage the mother: *"If you want, you can also kiss the picture."*

This gives a sense of control, as the mother/parent who has been drifting with the events can make individual decisions!

4.5. Say goodbye to the parents, and tell the child: "*We are leaving now, we are going to take care of you.*"

5. While Informing and reassuring parents/father and mother

a) Emphasize the "realness" of the child in order to compensate for the experience of the baby having been taken away right after the birth, sometimes the parents do not even have a chance to take a look at him/her. For example: *"Now that we have stabilized him, you can have a look at Tom.... he has such beautiful long fingers, we have noticed...."* – using as many positive aspects and reassurance as possible (stabilized, you can, beautiful, etc.).
b) Call the baby on his/her name.
c) Provide information on what has happened, what is going to happen now, and what can be expected.
d) Strengthen the parental role, for example by addressing the mother as such (calling her "mother"), etc.
e) Release the parents of responsibility and prevent self-accusation
f) Share all the more positive things about the newborn (outlook, details, his/her behavior, etc.).
g) Reframe the crying of the infant: e.g.: *"He/she indicates that he/she doesn't want to leave, how smart he/she is."*
h) Give precise advise on when and where the parents can inquire about the sick baby at the intensive care.
i) In the present status of the newborn there (at the intensive care) are the tools that make it safe for him/her (emphasize **safety** instead of complexity, technology or the critical state etc.).
j) Support breastfeeding / encourage the mother to collect her breast milk.
k) Stress the importance of visits.

6. Departure from the referral hospital and transport

6.1. While getting into the ambulance van and during departure:

Overview and reflect on the impact of events in the hospital, finding whatever can be framed as positive; e.g.:

"This mother was really desperate…", „I was angry at my colleague, because…", "I am happy that we could stabilize the baby.", "It is amazing how much will of life there is in this small creature."

6.2. During the actual transport continuous/regular messages should be sent to the child based on the signs he/she is sending; e.g.: *"We are half way"… "I can see that the speed of the ambulance is too fast for you"...* etc.

7. Arrival to the referring hospital and handover on the NICU-Level-III

7.1. Tuning oneself to the handover:
List the facilities and characteristics (strengths and weaknesses) of the NICU, recall previous personal experience and within that especially previous good experience at that institution. This will help our ability to cope with stress/problems.

7.2. Find a focused way of informing the local staff about information collected before and during the transfer, and assess the local environment (noise, tension, "frozen air"). Become aware of the mood and atmosphere of the hosting medical ward, rate the atmosphere of the NICU (score between 1-5).

7.3. At the beginning of the actual handover "clean the hand, clear and the heart, and the head – 3C technique" for the third time.

"*Turning off the tap / setting aside the disinfectant indicates that I am ready to pass over the sick newborn with emotional presence at the referring hospital.*"

While the doctor is giving the data the nurse stays close to the baby, giving him/her psychical support:

"*We have arrived." "Your mother's kiss is right here with you… even in this distance you are connected", etc.*

8. Farewell

To bid farewell to the child before leaving, to "close" the relationship (rapport) with the baby; e.g.:

"Here are the medicines, instruments, doctors, specialists who know how to help you heal. There is/will be a photo of your mother (father, etc.) with you, they

think a lot about you and send their love / healing power to you while doctors and nurses are taking care of you. All right, be good, heal as soon as possible, you beautiful eyed baby."

Important: Always close with something positive!

"Travelling" photo of a newborn with a picture of the mother.
Date of photo: 2018.02.26.

9. Homeward in the ambulance van

Review all the emotions, thoughts, experiences related to the case (by discussing, thinking through, writing down, etc.)

10. Long term mental health

To care for the long-term mental health of the medical specialists it is furthermore recommended to do:

- Regular recreation (recharging, relaxation): daily, weekly, monthly, yearly, and every decade;
- Participate in trainings that build self-awareness (individually or in group);
- Attend Case Discussion Groups (e.g. a so called Bálint group), where it is not the medical aspects of the case that are emphasized, but rather the provider's feelings, experiences, personal involvement, and so on;
- Review, regularly monitor and redefine the motivation behind the career choice.

Discussion

Emotional labor is an inevitable part of medical work, and this paper helps in the way of recovering essential elements of work that have been excluded or devalued before. For the PICU/NICU patients' and their parents', whose absence is most painful in the case of premature birth, but also for the HCP's own mental balance, the methods of this work instruction has been applied for five years now at the Neonatal Emergency and Transport Service of Peter Cerny Foundation (NETS-PCA), from physicians through nurses to ambulance drivers.

In the history of medicine giving empathy, sensing the pain and distress of others, and offering a spontaneous and therapeutic response to it so far have mostly stood on empirical grounds. Coping strategies according to psychological observations today are increasingly based on the newly discovered neurobiological foundations that are mapping the mirror neuron system. Even though medicine is becoming more and more technology based, the role of emotional work in healing is also becoming increasingly important. The ability of emotional resonance and the need for it has a prominent role, for example, in the neonatal transport environment. After an abrupt separation of mother and baby, from a psychological perspective, it becomes difficult to parent, and the baby's sense of security is shaken. Therefore, there is an ambiguity inherent in the HCP's double **„paradox" role**: they should strengthen the *attachment* between mother and infant by keeping the infant in the proximity of the mother, since the innate need of both infant and mother is to remain close to each other, soothe

each other, especially in case of distress and danger. At the same time, HCP has a duty to prepare both for *separation* (done by the very same team).

Emotional involvement is becoming known as Family Centered Care ("Guideline Section", 2007) and Family Integrated Care in NICUs (Altimier, 2015). Compassionate care stresses the importance of recognizing and validating needs, concerns and distress of others. Sympathy "involves intense feeling of a patient's suffering" (Altimier, 2015: 35), so actually feeling the pain, fear, worry etc. is becoming part of the task of PICU/NICU HCP. The HCP's own stress and emotions, however, are not emphasized, there are no guidelines on how to handle this extreme affective involvement while providing highly sophisticated technical care.

The main purpose of developing this new work instruction for everyday care of the dedicated neonatal transport service (NETS-PCA) was to consciously apply the latest knowledge of affective psychology and perinatal sciences during neonatal care. Instead of the mechanical, objectifying care, it was our aim to get closer to the highest quality of humanized care. In doing so, we can make definitive efforts in strengthening the relationship between the neonate, the neonatal team and the mother, father (family), under all circumstances. Providing "resonance based medicine" can be a way of ensuring mental balance for the newborn and the family as well as the healthcare personnel.

Resonance based medicine means that it is possible for the caregiver to resonate with the emotional pain of the patient but at the same time keep a distance and support the baby and the family with a special emotional attunement. This method allows for the patient to draw strength from the caregiver and also, through reflective strategies, helps maintain HCP mental health.

Applying resonance based medicine means that communication between team members, the staff and family members (parents) is emphasized, just like communication "with oneself", in the form of self-suggestions. This way staff members can read the signs of the baby more and communicate with parents in a way that makes accepting reality and decision-making easier for them. The guidance also helps in strengthening parent identity by using parent engagement strategies (photo, milk, calls to the hospital), and, as a new aspect that has been marginally discussed before; it contains

strategies that help medical professionals and other staff members maintain mental balance.

In the first phase of the development, the aim was to develop a well-functioning mental health supporting work instruction that incorporates new elements of emotional presence and then to routinely apply it in practice. Obviously, this can only be done in a descriptive study, and cannot be measured by objective parameters. However, the use of this method in nearly 20,000 cases has provided several opportunities for observation about communicational strategies. These observations have been discussed and analyzed during the peer reviews held every half year for the transport team members.

Conclusion

The use of resonance based medicine and appropriate suggestive language in cases of critically ill in general, and in neonatology in particular is essential for the sake of the infant, of the parents/family members (due to their stress), of colleagues, and also of the staff members.

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