

# CUIDADO É FUNDAMENTAL

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RESEARCH

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## Fundamentals of care in weighing the newborn

Fundamentos do cuidado na pesagem do recém-nascido

Fundamentos de cuidado de peso en el recién

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### ABSTRACT

**Purpose:** to describe, comparatively, two representative images of the weighing procedure of newborns contained in works from 1949 and 2011. **Methodology:** The study proposes comparative history. **Results and discussion:** In the publication of 1949, a marked concern was identified in the newborn with quantitative images used to handle it, which is distinctly identifiable in 2011, when it is pointed out the concern with the Weighing technique directed to the sheet. **Conclusion:** From the visualization of the mosaics, it was evidenced that in 1949, the newborn was the greatest point of importance of direct care; While in 2011, it is inferred to be the technological instrument that deserves visual prominence. In this way, the present study brings to the fore reflections that allow margins for future research on how similar, or not, it would be possible to point out the care performed in an observational aspect of the past in the present in neonatology care.

**Descriptors:** Neonatology, Newborn, History.

### RESUMO

**Objetivo:** Descrever, comparativamente, duas imagens representativas do procedimento de pesagem dos recém-nascidos, contidas em obras de 1949 e 2011. **Metodologia:** O estudo tem por proposta a história comparada. **Resultados e discussão:** Na publicação do ano de 1949, identificou-se a preocupação acentuada no recém-nascido com quantitativo de imagens utilizadas para o seu manuseio, que, de forma distinta, é possível se identificar em 2011, quando se aponta a preocupação com a técnica da pesagem direcionada ao lençol. **Conclusão:** Pela visualização dos mosaicos, evidenciou-se que, em 1949, o recém-nascido era o ponto maior de importância do cuidado direto; enquanto que, em 2011, infere-se ser o instrumento tecnológico o que merece destaque visual. Dessa maneira, o presente estudo

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traz à baila reflexões que permitem margens para futuras pesquisas sobre o quão semelhante, ou não, poder-se-ia apontar os cuidados realizados numa vertente observacional do passado no presente no cuidado em neonatologia.

**Descritores:** Neonatologia, Recém-nascido, História.

## RESUMEN

**Objetivo:** Describir comparativamente dos imágenes representativas del procedimiento de peso de los recién nacidos contenida en las obras de 1949 y 2011. **Métodos:** El estudio se propone la historia comparada. **Resultados y discusión:** En la publicación del año 1949, que identifican la fuerte preocupación en el recién nacido con imágenes cuantitativos utilizados para el manejo de la misma, que de diferentes maneras puede ser identificado en 2011, cuando se señala la preocupación por pesar el arte dirigido a la hoja. **Conclusión:** Para la visualización de mosaicos, se hizo evidente que en 1949, el recién nacido era el punto más importante de la atención directa; mientras que en 2011, se infiere que la herramienta tecnológica que merece más destacado visual. Por lo tanto, este estudio nos lleva a reflexiones que permiten márgenes para futuras investigaciones sobre cómo similares o no, el poder desea señalar a la atención proporcionada en un brazo de observación del pasado en el presente en el cuidado de neonatología.

**Descriptors:** Neonatología, Recién Nacido, Historia.

## INTRODUCTION

The technological progress of the Neonatal Intensive Care Unit has changed the epidemiological profile of newborns, especially premature infants, and it is undeniable that therapies such as the antenatal corticosteroid, exogenous surfactant, and mechanical ventilation management have had an impact on care.<sup>1</sup>

Nonetheless, the attention to the premature, generated interest only from the middle of the nineteenth century, because previously they were seen as the least adapted to survival, under the view that they were natural selection, as they were, which was used the term weak to characterize them.<sup>2</sup>

In this sense, the low attention given to children was mainly reflected in the treatment directed at them, since there were few places to attend to this type of clientele.<sup>3</sup>

Consequently, in the traffic of the late nineteenth and early twentieth centuries, the attitude toward the newborn was modified, when children born prematurely and with malformations increased death rates, leading to mortality rates in numbers of 100-200 to every 1,000 live births, which became noticeable and became a concern for the survival of this population.<sup>2</sup>

Combined with these changes, the feelings and values related to the child, family and children began to arouse interest in medicine, with an emphasis on their singularities, infirmities and treatment.<sup>4</sup>

Aiming to offer assistance to newborns, the development of technological apparatuses stood out in the late nineteenth century, with advances in the health field, coupled with the development of care for newborns.<sup>5</sup>

In this context, the concern was no longer maternal conditions in the postpartum period, but rather, the children who were born. To think of this logic is to recognize the

dating of 1880, when the first incubator was developed from the adaptation of the heating chambers to the birds, when it was possible to identify the reduction of infant mortality, weighing less than 2000g from 66% to 38 %. This is due to the advent of incubators, when Martin Tarnier, an obstetrician, implemented technology as the care fundamentals in neonatology.<sup>4</sup>

Pierre Budin, also an obstetrician, knowledgeable of this technology extended the works of Tarnier, through the improvement of the incubators. He developed the principles and methods that touched the beginnings of the field of knowledge – the neonatology.<sup>5</sup>

Another significant aspect that indicates the neonatology onset can be described in the nursery scenario, these were intended for premature infants, which can be exemplified by the proposal and administration of pediatrician Julius Hess and nurse Evelyn Lundeen in Chicago at the beginning of the twentieth century.<sup>2</sup>

By that time, there was a dispute in the field of medicine, delimited between obstetrics and pediatrics, then leaving the care for newborns in a kind of game. To that end, academicism came into the picture through Julius Hess through research concepts, which led him to be recognized, by references, as one of the leading American specialists in prematurity.<sup>5</sup>

In the meantime, it is plausible to point out that Hess was prominent in both the academic and the assistance areas, with regard to the premature and its peculiarities, being responsible for the publication of more than ten works throughout the decades of 1920, 1930 and 1940 and was also the founder of units for the specific care of this clientele.<sup>6</sup>

It should be noted that nursing played a fundamental role in the development of neonatology. Julius Hess himself pointed out that its relevance was in carrying out the specialized care, considering the minimum handling of the newborn, hand washing and the use of aprons, caps and masks, inside the care units with the babies. This is due to the results obtained with the training and services of nurses in supervising of the activities in consideration.<sup>7</sup>

One of the nurses who deserves special mention was Evelyn Lundeen, who along with Julius Hess wrote some books, among them: *The Premature Infant: Medical and Nursing Care*, dated 1941 and reissued in 1949, evidencing its position in the field of pediatrics, delimited in neonatology.<sup>8</sup>

In summary, this work was composed of 381 pages, illustrated with 101 images, addressed the advances in the knowledge of the care of premature baby, with description of therapeutics such as the use of sulfonamides and antimicrobials in the treatment of infections, as well as treatment of infectious diarrhea, meningitis, blood dyscrasias and pathological infections of the eyes and skin, along with advances in nutrition methods at the time. A chapter devoted to professional education and nursing procedures in the care of premature and full-term newborns was also part of the publication.<sup>8</sup>

The book described step-by-step, some procedures performed by nurses or persons assigned responsibility for the care of the newborn. Among them, weighing the neonate by including images to guide the procedure.<sup>8</sup>

The images in the work of the year 1949 drew attention due to the similarity with the imaginative content contained in the Handbook of Humanized Attention towards the Low Weight Newborn - Kangaroo Method, dated of 2011, which, in spite of the temporal detachment, was aimed at clarifying the procedure of weighing the newborn that is pointed out as a concern, which is not about the twenty-first century, but about the last century.<sup>9</sup>

It should be emphasized that the aforesaid Handbook consisted of 205 pages, divided into 15 sections, which was elaborated as the set of measures adopted to promote humanization in perinatal care, then highlighting important aspects to be evaluated in the scope of care and neonatal care. Among them, strategies to reduce stress and pain, contributing to the comfort and development of the newborn.<sup>9</sup>

As can be identified, the occurrence of the temporal gap of more than 60 years between the publications in question caused some concern, which motivated the present investigation. This poses the following guiding question: What are the similarities and the divergences of the newborn weighing procedure, which are represented in images by the two works?

Therefore, with the proposal to answer the guiding question, the study's aim was to describe, comparatively, the two representative images of the weighing procedure of newborns portrayed in works from 1949 and 2011.

## METHODS

The study proposes the approach of comparative history, with the understanding that it makes it possible to systematically examine the same research problem in two or more distinct realities, as well as structures in space and time, with repertoires of representations, by involving cultural practices of at least two mentalities constituting knowledge and possibilities of reflections before, yet, not realized.<sup>10</sup>

The methodology chosen, in order to meet the proposed objective, stands out as an important instrument for scientific development, being essential for the renewal of historical research, since "it has as attribution the understanding of concrete events explained by material causes, ends and accidents", which is "a branch of history aimed at analyzing the similarities and divergences between human societies."<sup>11:194</sup>

The two publications point to the procedure of weighing, both by step-by-step described, and by illustrative images with explanatory captions. For this study, we will dwell on the image, properly said, aiming to understand that the image is also text, but as another language. Moreover, the present study brings to the fore reflection of the past in the present, encompassing knowledge derived from theoretical references regarding the methods and fundamentals of nursing care, related to educational, care, and administrative practices.

In order to do so, the study used two images that illustrate the procedure of weighing the newborn; one of them contained in the literature of the year 1949, to be compared with those published in a publication dated 2011, which during the analysis and discussion were articulated to the literature of adherence in order to detail the results.

Considering the legal and ethical aspects, the images used as analysis documents comply with the determination of Law No. 9.610/1998, based on the 70 years and the use of public documentation, through the dictates of the public domain.<sup>12</sup>

## RESULTS AND DISCUSSION

Discussions about the humanization of the newborn, especially the premature infant, are pertinent. This is possible in the Intensive Care Unit environment with negative sources and stimuli (pain, stress, equipment noise, excessive handling and painful invasive procedures) in the development of the newborn.<sup>13</sup>

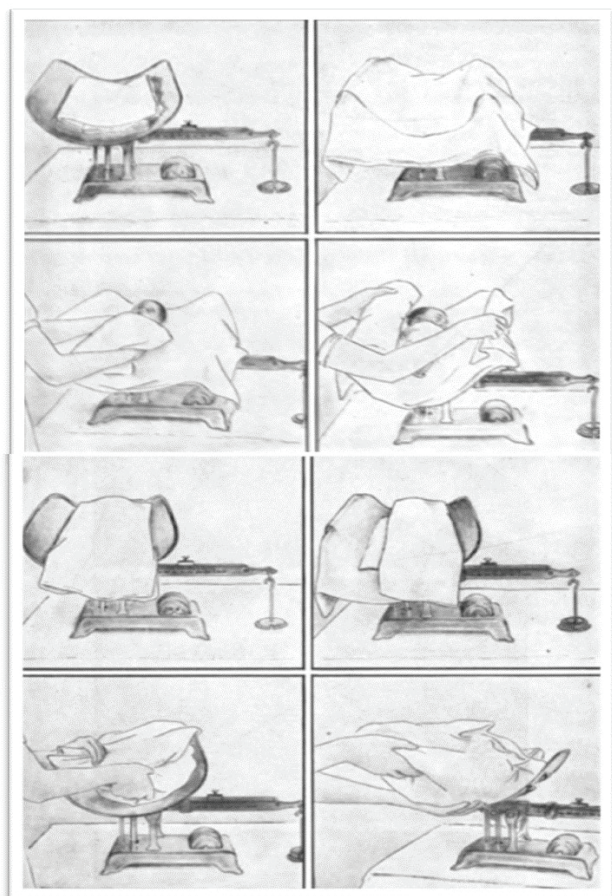
The understanding of the minimum handling as a beneficial strategy in the care of premature was already mentioned since the nineteenth century. The theses of medicine, at the time, signaled for the delicate handling of the newborn, thus avoiding the commitment of the organs of the neonate.<sup>14</sup>

The frequency and interval of weighing of the newborn were a point of discussion among the authors in the works that transited from the twentieth century to the present day.

This fact, in 1949 the authors emphasized in several sections of the work that takes care of premature, it was necessary to plan the time, in the sense of handling it as little as possible, as beneficial, with the purpose of avoiding the unnecessary stress, understanding that he did not have adaptive ability for excessive handling. In this sense, among the highlights was the weighing procedure, considered routine, and described in a step-by-step manner and illustrated with images for better understanding in the **mosaic-figure 1**.<sup>8</sup>



**Mosaic-figure 1** - Step-by-step newborn weighing procedure in the year of 1949.<sup>8</sup>



**Mosaic-figure 2** - Step-by-step newborn weighing procedure in the year of 2011.<sup>9</sup>



The **mosaic-figure 2** shows the step-by-step demonstration, by means of eight quadrants, for the weighing of the newborn. In these, we can identify that the sheet is first placed on the hand scale, which was graded in four grams for greater accuracy of weight. Subsequently, the sheet has its weight discounted in the total value, then, the newborn, held by the two hands of the caregiver, in order to be led to the scale wrapped in another sheet. After being accommodated in the scale, the neonate is then covered by the first sheet placed on the surface of the instrument. Then, in the **mosaic-figure 1**, it is pointed out that the stabilization of the value relative to the weight may be expected, and the newborn still wrapped in the sheet is removed from the scale. Note that for the removal of the newborn the caregiver supports the same in his left hand and then uses the right hand to finalize the support.

Following the logic adopted in the years 1949, the Manual in 2011 also brings the sequential step by step for the weighing of the newborn contained in **mosaic-figure 2**. The procedure is punctuated in the work with the purpose of performing the care in an individualized way, taking into account the neonate itself and its adaptive and reactive characteristics to minimize handling by the care team.<sup>9</sup>

In **mosaic-figure 2**, the step-by-step is presented to the reader in six quadrants. Here the digital scale technology is used for the process, justified by the fact of the greater reliability and speed in the procedure.<sup>9</sup> A white sheet is previously weighed, its weight being discounted from the total value, shown in the approximate image as “zoom in” in the equipment. Note that the same sheet involves the newborn at the time of actual weighing.

In the quadrant number five of the **mosaic-figure 2**, one notices the child wrapped in a colored sheet, different from the fourth quadrant. Either way, the newborn remains wrapped in the tissue throughout the procedure.

Some points of similarity and divergence between the two publications are noteworthy, as far as the images presented are concerned. In this sense, with a view to better visualization and design, a pairing of the images in mosaics was made, which gave rise to the **mosaic-figure 3**, aiming at showing what has been said thus far, when the technical description is scored, in a general and comparative way through the step-by-step procedure.

**Mosaic-figure 3** - Paired step-by-step images for the newborn weighing procedure.<sup>8,9</sup>



Overall, it can be pointed out that in the description of 1949, the technique was demonstrated in eight quadrants, and in 2011 through six. In these, the newborn appears in six (75%) and three quadrants (50%), respectively.

In both, the sheet is tared before the actual weighing, with a similar purpose that is to protect the neonate against the cold, besides keeping it organized during the procedure, as previously punctuated.

Another point worth mentioning is the fact that the “to tare the scale” is demonstrated in two quadrants from the publication in 1949 (25%), while in 2011 it is highlighted in three quadrants (50%), including one approaching.

Concerning the scale, it should be noted that in the sixty-year interval between works, there are differences between the instruments used. It is important to note that, in 1949, the manual model of the scale was characterized by a wide base of support on the right side and a ruler graduated every four grams, which used a pendulum-type weight at its left end, aiming at the point of scale while moving the little cursor in order to mark the weight from the newborn placed on a concave part on its right side.

In the 2011 publication, the instrument shown in the images was an electronic model, brand Filizola<sup>®</sup>, with display in the base on the left, graduated every five grams. It has an own button to tare the scale, besides a dish concave fixed with base in all its extension.

Another divergence to be noted is the fact that in the 1949 publication, the use of two sheets is pointed out (one that was in the scale and the other keeping the newborn involved), and in the work of 2011, we can only see one, the that we can infer there has been some interruption in the procedure, at least in relation to the images provided by the material consulted. Even so, the fact of the concern to preserve the

body temperature of the newborn, as well as the neurological organization, during the procedure, prevails in both works.

From the description of the technique through the images, it is also possible to highlight that in the twentieth century, through the work of 1949, the procedure of weighing the newborn was finished with the same being removed from the scale, which in turn was not demonstrated in **mosaic-figure 2**, since in the last quadrant, there is the neonate wrapped in the sheet, with the measured weight, appearing on the scale display.

Still considering the demonstration of the technique, it should be noted that in 1949 the nurse or caretaker was included in the images, observed by the hands, portrayed in four quadrants (50%), while in 2011 there was no this type of reference.

Conclusively, the moment of the weighing itself is similar in both works, with the neonate wrapped in the sheet, a fact that is signaled in the last two quadrants from the two works.

After the images description, using the quadrants and mosaics assembled, and considering the dates of the works, it cannot be denied that the model of the scale is divergent, since one is manual and the other digital. These are technologies, each of its time, aiming at the accuracy of the value to be measured.

In the 1949 publication, a marked concern was identified in the newborn with quantitative images used for its handling, which can be identified in 2011, when the greatest concern with the weighing technique directed to the sheet. This implies in the indication of distinct epochs, when the mentality of the work published in the 1940s was the newborn and the decade of 2011 was the precision directed to the fabric and the scale used.

Given the abovementioned, and considering their times and their works, at the same time that the images are similar, at



first sight, become divergent from a comparative perspective, when the distinctions are then evidenced.

By pairing the two images in the **mosaic-figure 3**, and considering the contexts and the signs of the mentalities, we can risk the assertion that in the mid-twentieth century the direct care for the newborn was based on a less technical practice with concern for the newborn in itself. Even through the use of more complex technology, in other words, the use of the incubator, for example, the newborn was still the care focus. On the other hand, it can be inferred that over the years, the basis of care took different direction, since in the work of 2011, it seems to be the technological instrument and its precise functionality, a point of concern shown in the images, and thus, if what was subject to investigation becomes object of manipulation and technology, the object of desire and status in the environment of the Neonatal Units.

In order to think through this perspective requires not to get deluded with the images. Although they may show the same procedure – weighing procedure – they are distinguished in the use by the mentality that the imaginary text makes possible to evidence in the visual intentionality presented in both works.

## CONCLUSIONS

It can be noticed from the images that the weighing was surrounded by other concerns, among them, the maintenance of body temperature, considering the use of protective sheets in the scale and in the newborn, based on concepts related to losses by conduction, convection, evaporation, and radiation.

Both publications pointed to the use of tissue for the lining of the scale, by not allowing direct contact of the body of the newborn and the surface of the equipment, besides reducing the exposure to cold during the procedure, as well as enabling the reduction of stress and handling. These were points discussed in both publications with the benefit of minimizing the possibility of postural disorganization.

Given the aforementioned, considering their times and the interval of more than sixty years between the studied publications, it can be inferred that the images, while at the same time, are similar at first sight and are different from each other, since they allow reflections of subtle gestures of different times, which implies that, despite concerns about the procedure, the subject has occupied another space in the visualized images and, therefore, technically, as an object of study, previously subject.

It is possible to infer that the current care that is given to the newborn gains prominence in its ingrained care of new technologies and ends up in itself going in counterpart to what was pointed out in the middle of the twentieth century, when there seemed to be greater consideration to the newborn in itself and its peculiarities.

Furthermore, in other words, by the visualization of the mosaics, it was evidenced that there was little change in the performance, properly, of the technique of weighing the neonate. Nevertheless, it is perceived that in 1949, the newborn was the major point of the importance of direct

care; while in 2011, it is inferred to be the technological instrument that deserves visual prominence.

Given the foregoing, the present study brings up reflections that may boost future researches about how similar, or not, is the neonatology care in the past regarding the present; likewise, it would be possible to point out the care performed in an observational aspect of the past towards the neonatology care present time.

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