

# Father's experiences during the stay of the premature baby in the Neonatal Intensive Care Unit (NICU): a systematic review protocol

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## Protocol

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# Abstract

**Background:** This systematic review aims to understand the father's experience in the neonatal ICU while accompanying his premature baby. Prematurity rates are increasing; every year, millions of parents faced having their premature baby hospitalized in neonatal ICU without being prepared to face this situation. It is relevant to talk about how fathers feel with the experience of being parents of premature babies. The father-baby attachment is affected by prematurity, thus performing the kangaroo care method with the active participation of the father is vital to promote the attachment between the dyad.

**Method:** The authors will include original father-centered research articles, with measurements made in the Intensive Care Unit (ICU). Databases included articles from 2010 to 2020, are APA PsycNet, BVS, Web of Science, PubMed, Scopus, and The Cochrane Library (Cochrane Central Register of Controlled Trials. CENTRAL). Two researchers will extract the data and evaluate the quality of each study through the Newcastle-Ottawa Scale (NOS) and the Critical Appraisal Skills Programme (CASP) and references will be managed in the Mendeley software. This review will not perform a meta-analysis, results will be presented in a qualitative narrative synthesis that includes all the data found.

**Discussion:** This review will contribute to the construction of evidence about the father's experience in the neonatal intensive care unit, as well as how attachment develops between the baby and the father in this field and how the kangaroo care method promotes attachment in this dyad.

**Ethics and dissemination:** This is a protocol for a systematic review, therefore, no approval from an ethics committee is required. We will submit the article to a peer-reviewed health journal, and the results will be published in congresses focused on neonatal, child, and psychological health.

**PROSPERO registration number:** CRD42019142086

## Background

The ability to develop attachment begins in humans from gestation [1] it contributes to survival and allows them to obtain satisfaction [2]. Preterm birth generates an unplanned physical separation between the father-baby dyad that limits their interaction time [3][4]. Every year about 30 million premature babies are born affecting families around the world. At least 2.5 million of these babies die from complications, this implies that newborns at risk need specialized attention [5]. The kangaroo care method saves the lives of thousands of premature babies every year, by promoting the establishment of attachment [6] it has been proven that even twenty years after its application, it has positive results in the social growth and development of abilities[7] [8] [9].

Hospitalization is unexpected and in most cases negative [10], the experience with this type of birth can generate discomfort, anxiety, and depression, [11] and can even cause typical symptoms of PTSD, up to one year after [12] [13]low social support, the stress caused by childbirth[14] and challenges related with the fathers' health and financial problems are frequent predictors for this condition [15] [16]. The father

usually struggles between the joy of having his newborn baby and the sadness that he is in the ICU [17]. The fact that hospitals do not allow fathers to accompany mothers on the nights with their babies difficult the care of the newborn, so accessing psychotherapeutic care would increase the chances of establishing a good relationship, and generate adequate coping strategies [18]. The separation between father and baby, the exclusion of the role of fathers as primary caregivers [19] and postpartum depression, affect the establishment of bond and attachment between father and baby, early identification will help improve the relationship between these two [20].

Most studies on parents in intensive care units focus on the mother [21], the information on the father-baby dyad is less compared to that of mother-baby [22] [23], although fathers have neurological and hormonal changes that support their need for attachment with the baby, society has imparted different expectations compare to the mother [24]. Fathers have different needs, usually, their difficulties are hidden and silenced [25], understanding the father's experience would improve care in the neonatal units and enhance family-focused health services [9,26,27]; therefore, programs that focus on gender equality are needed, identifying their differences [28], will help maintain the commitment father-baby [29].

Fathers generally experience difficulties in developing their parental roles due to the low autonomy they have in intensive care units and the restrictions they have with the visiting hours [30,31, 32]. Health personnel must communicate with empathy from the beginning [33, 34], constantly encourage fathers to participate in care, provide information to understand the diagnosis of their children [35], carry out new strategies such as including parents in medical rounds to improve their participation [36], rely on technologies that allow fathers to feel closer to their babies and share their experiences with other parents in the same situation [37].

Consequently, it is necessary to understand the father's relationship with the premature baby in the ICU, besides, the need to conduct studies focused on this topic increases due to the low production of studies focused only on the father. A better understanding of this topic will contribute to the physical and mental health of the father and the baby.

## **OBJECTIVES**

This review aims to understand the father's experience in the neonatal ICU while accompanying his premature baby, including the feelings and emotions that the father has at that moment, as well as to highlight the influence of the father on the newborn. We hope to gain insight into how the attachment relationship between the father and premature infant is developed, and how the kangaroo care method helps to establish it and to have the perception of the father at that moment.

## **Method And Analysis**

The authors will carry out the systematic review of studies focused on the father based on the Cochrane Handbook for Systematic Reviews following the recommendations of the Prisma method, also, we will evaluate the quality of each study through the Newcastle-Ottawa Scale (NOS)[38] the version adapted for

studies not randomized, and the Critical Appraisal Skills Programme (CASP) [39] to assess randomized, cohort, and cross-sectional studies. This review is registered in the International Prospective Register of Systematic Reviews PROSPERO (CRD42019142086). Bibliographic references will be administered in Mendeley. We will use for this protocol the steps of the Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P) [40]. In the case that we identify multiple studies that in their method and results report homogeneity and allow for a meta-analysis, it will depend on the degree of heterogeneity of the data to choose whether to carry out a random-effects model or a fixed-effects model. To consider the degree of reliability of the studies, we will perform a chi-square ( $p > 0.05$ ) or the confidence interval of the  $I^2$  statistical test [41].

## **Search strategy**

### **Electronic searches**

The systematic review will include original articles, published in scientific journals, searches will be carried out from September 29, 2019, to September 29, 2020. Databases include APA PsycNet (American Psychological Association), BVS (Biblioteca Virtual em Saúde), Web of Science (Science and Social Science Citation Index), PubMed, Scopus, and The Cochrane Library (Cochrane Central Register of Controlled Trials - CENTRAL).

### **Search Criteria**

This systematic review design follows the Preferred Reporting Items for Systematic Reviews and Meta-Analyses protocols [41]. For the keywords of the search, a vocabulary control was carried out on the MESH platform including some subtitles of the terminologies, to expand the search, some keywords of articles focused on the subject were used, we used a unique vocabulary for each database. Search strategies can be found in the supplementary file 1.

### **Eligibility Criteria**

The PECOS (patient, exposition, comparison, outcome) approach was used to specify eligibility of studies. The population comprised of Fathers of premature babies in the ICU, The exposition comprised of Premature baby in the ICU. The control of Father-baby interaction. The outcome of Father's experience.

The inclusion criteria will be studies published between 2010 and 2020; empirical studies in Portuguese / English / French / Spanish and full-text articles, in the event where access is restricted, we will request the full version to the authors via email. Dissertations, book chapters, reports, case studies, conference materials, reviews, and meta-analytic documents will be excluded from the main search. There also will be excluded studies in which the main objective is about the mother or that worked with teenage fathers. The research will be rerun during the completion of the work and further studies may be included. We will repeat the searches just before the final analyses, further studies may be retrieved for possible inclusion.

## **Participants**

Underage Fathers of premature babies with gestational age less than 37 weeks, who are in the neonatal ICUs accompanying their hospitalized baby, clinical and non-clinical populations.

## **Types of outcome measures**

We will consider as results any measure that includes the importance of the father in the neonatal unit; experiences of the father at that specific time accompanying his premature baby, as well as feelings and emotions (such as stress, distress, hope) during hospitalization in the neonatal ICU, also, the description of these experiences that can provide improvements for the development and health of the premature baby in the ICU follow-up, furthermore, how parents establish their attachment relationship with the premature newborn and how is their experience with the kangaroo care method.

## **Studio registration:**

## **Selection process**

Three researchers are involved in the study selection. Two reviewers will screen the articles, first by reading the titles, independently. The Mendeley Software will be used to check for duplicate references. The two reviewers will then screen remaining titles and abstracts for eligibility and will retrieve full-text of potentially relevant studies according to the inclusion criteria. In case of disagreement, a third reviewer will resolve through discussion the eligibility of certain studies. Upon completion of the research process, a manual search of eligible studies will be performed through the references of included articles to ensure the highest possible number of included studies.

## **Data Extraction Process**

A standardized form will be used to extract the data from the studies. The following data will be extracted: article title; author(s); type of study (not randomized), journal title; publication year; recruitment method; participants (fathers); the context of study realization; sample characteristics (e.g. presence of fathers); study objective; to talk about the experience or perception of the father during the stay of the premature infant in the neonatal ICU.

## **Quality assessment**

Two reviewers will retrieve the data in a standard and independent manner. A third author will resolve potential discrepancies and disagreements. We will evaluate the studies 'quality with the Newcastle-Ottawa Scale (NOS), a quality scale with three categories: selection, comparability, and outcome [38] see more in appendix 1. We will also use CASP, which is a qualification list with 10 criteria, that assesses randomized, cohort, and cross-sectional studies and categorizes them as high (8 to 10), medium (5 to 7), or low quality (4 or fewer) see more in appendix 2 [39].

## **Data synthesis**

The synthesis will be realized using the final data extraction. A narrative synthesis with categories of analysis will be created, focusing on the review questions, mainly associated with the objective reached about how is the father's experience in the neonatal ICU with his preterm baby.

### **Patient and Public Involvement:**

This is a systematic review, which means that we won't work with patients or the public.

## **Discussion**

The number of premature births in the world has increased in recent years, in underdeveloped countries the levels of infant mortality due to prematurity are higher than the countries that have access to better health systems. The annual report of State of the World's Fathers to MenCare stated that 80% of men on the planet are parents or will be [42] so finding data focused on the father is relevant to the medical and psychological area. This systematic review is the most recent that focus solely on the male father. We hope that the synthesis of these results yields a detailed description of the experience of the father in the neonatal intensive care, as well as information on how attachment develops between baby and father in this field and how the kangaroo method promotes attachment between these two subjects. Acknowledge the father's experience with his premature baby, helps health personnel to be better prepared and to provide better care in the ICU, it will also be valuable so that prenatal care includes more the father and he can be better prepared for the time of delivery, and in cases of hospitalization. It is essential to promote changes in the way care is given by health personnel in ICU, this alongside with the effect that the inclusion of the father in prenatal care have, would allow him to be better qualified for the moment of childbirth and in cases of hospitalization.

The results will be rigorously analyzed, and this systematic review will be developed based on the declaration of reviews and meta-analysis PRISMA-P [40]. Modifications or improvements made to this protocol during the progress of the study will be notified on the PROSPERO platform and will appear in the final article.

### **Strengths and limitations of this study**

Literature tends to focus on the relationship between the mother and the premature baby, so one of the strengths of this review is that it focuses on the experience of fathers in the neonatal ICU. The systematic review will include studies published in four languages to increase the number of studies. We hope that the findings of these studies contribute to the structuring of programs that promote parental care for premature babies. However, a possible limitation is that if the number of articles found is relatively small, this will reduce the capacity for homogeneity and the possibility of performing a meta-analysis.

## **Declarations**

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### **Availability of data and materials**

The datasets generated and analysed during the current study are publicly available.

### **Authors' contributions:**

ZG conceived the idea of the systematic review. ZG and GR as the second reviewer were responsible for conceiving the search strategies and the article selection process. ZG and GR designed the systematic review manuscript. JP is the third reviewer who will review the industry and the resolution of any dispute arising during the preliminary phases.

### **Ethics and dissemination**

We will gather evidence from published articles focused on the experience of the father of the premature baby for this systematic review, and we will not require approval from an ethics committee. The individual trials that are part of the selected articles must have been approved by their respective ethics committees and research in human beings. Our results aim to promote active fatherhood in the ICU. Results will be published in congresses focused on neonatal, children, and mental health.

### **Consent for publication**

Not applicable

**Competing interest statement:** We declare that there is no conflict of interest between researchers.

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