Abstract

Objective: This study analyzed the concept of "Safe childbirth" using the method proposed by Walker and Avant, which establishes eight steps for the construction of a concept.

Method: Literature search was carried out in the Virtual Health Library (VHL) and the Scientific Electronic Library Online (Scielo) in the period from April to July 2016. Controlled descriptors were: "Parturition", "Safety" and "Patient safety", in Portuguese and English. The compound term "Safe childbirth" was also used. Thirty two productions were included in this analysis.

Results: Among the attributes, maternal and fetal monitoring stand out and, as antecedent, the identification of risks for preventing damage. The reduction of maternal and infant mortality and the well-being of the mother-child binomial were evident in this work. Following the establishment of model case and opposite case, the definition of safe childbirth was obtained: "the set of care measures that seek to identify risks, prevent damage and/or complications during delivery, ensuring maternal and fetal monitoring in favor of the welfare of mother and child".

Conclusion: The analysis of the essential attributes, its antecedents and consequences made it possible to define the concept of safe childbirth. However, it is considered that this concept is changeable bearing in mind that there is a lack of randomized studies to identify potential risks to childbirth.
Introduction

Pregnancy is a period desired by most of women and ends with the delivery, which is fraught with feelings that include the expectation of the baby's birth to the fear of pain and insecurity that something negative might occur.

According to the World Health Organization (WHO), childbirth is a complex and sometimes difficult process; it is necessary and essential to ensure the mother and newborn the safest care possible [1]. Childbirth can hold surprises that require from the care team knowledge of its mechanics. The care team should be also able to detect events that may lead to complications as early as possible. Such complications may be minimal or present potential for lethality and/or mortality. A skilled obstetric care minimizes maternal and neonatal complications, reducing the rate of maternal and neonatal mortality, which is still very high [2].

Worldwide, more than 500,000 women die from pregnancy and childbirth complications every year. Nearly seven million women survivors of these complications remain with health problems, and almost 50 million suffer adverse consequent events of childbirth [3]. Corroborating these statistics, recent data from WHO [4] reflect the magnitude of mothers and babies mortality. Among more than 130 million births per year, it is estimated that 303,000 will result in maternal deaths, 2.6 million, in stillbirths, and another 2.7 million, in neonatal death. These deaths occur mostly in resource-poor settings, often for lack of skilled birth attendants.

Therefore, maternal and neonatal mortality is a global concern, and great effort has been made to minimize these deaths, as most are preventable. These efforts should be done to combat damage against women and also to qualify obstetric care so that maternal and neonatal outcomes correspond to expectations, ensuring a safe option for pregnant women and their families [2].

Enabling strategies to prevent harm or to recognize potential complications at early stages ensures the safe childbirth. This means that unnecessary interventions should be avoided. Among the interventions, we can mention the caesarean sections without precise indication, inopportune episiotomy, contraindicated maneuvering such as Kristeller, and malpractice of operative vaginal delivery (forceps, vacuum extractor). Therefore, professionals must be qualified to prevent complications and, in due course, opt for a safer delivery to the binomial, so ensuring the better option. [4].

In order to provide security in the mother and child care, checklists were created to remind professionals essential tasks that allow to provide a service with quality and safety 4. However, WHO does not define clearly the concept of “safe childbirth”, leaving gaps for professionals intervene according to their subjectivity.

The understanding of safe childbirth is still somewhat subjective, as what the researchers emphasize as safe childbirth care is far from what professionals believe and practice. Therefore, the gap between theory and practice needs to be resolved, and for this, it is necessary to clarify the concept of safe childbirth.

There is no consensus for the concept of “safe childbirth”, although there is a worldwide movement towards patient safety during delivery, whether the vaginal, surgical vaginal, or cesarean delivery, performed at home, hospital or birth centers. Thus, the need to clarify this concept is evident, considering that the use of the term is widespread, particularly by WHO, and nonetheless, there is no clear definition for its application. Changes in physiological delivery patterns are evident in studies [5], causing a dynamic transformation of the concept studied.

Concepts have the primary function of allowing descriptions may be inferred, facilitating effective communication between individuals. Concepts represent a reality and have dynamic attributes, changeable according to the time in which they happen or by the context used and evolve when they are applied. Concepts promote the construction of
scientific knowledge, and it is, therefore, necessary that their essential attributes and their definitions be continually reviewed and analyzed, allowing their improvement [6].

Concept analysis can be useful to the design of a particular phenomenon. The results of this analysis can collaborate to judge measurement instruments available to respond to the phenomenon in question or for construction of measuring instruments, allowing critical observation of others interested in the same context [7].

The aim of this study was to analyze the concept of "Safe childbirth" using the method proposed by Walker and Avant [8] to minimize the gaps that lead to unsafe childbirth.

Method

This study is based on Walker and Avant's concept analysis method, which establishes eight steps to construct the concept: 1) Concept selection; 2) Determination of the objectives of the conceptual analysis; 3) Identification of possible uses of the concept; 4) Determination of critical or essential attributes; 5) Construction of a model case; 6) Development of other cases, adjacent, related, contrary invented and illegitimate; 7) Identification of antecedents and consequences of concept; 8) Definition of empirical references to essential attributes[8].

Following the first step of Walker and Avant, the concept being considered is the term "Safe childbirth", as this term is widely used nowadays notwithstanding the lack of real definition [6]. Although WHO has spread the practice of safe childbirth, its real definition is unclear. Eliminating multiple meanings for “safe childbirth” is necessary to refine the concept presented by researchers, so promoting the desirable safe practice, minimizing the subjectivity of the practical context to safe childbirth.

An integrative review to identify possible uses of the concept was performed using Mendes Silveira and Galvão [9] as reference. The review was held between April and July 2016. Five of the six stages determined by the authors were contemplated, and the sixth stage (knowledge synthesis) has not been described in this study. The first step of the review determines the research question, leading to three questionings: a search in the virtual databases, which is the definition of safe childbirth available in the scientific literature? What are the conditions that lead to a safe childbirth? What are the consequences of safe childbirth?

In the second stage, literature search was carried out in the Virtual Health Library (VHL) and the Scientific Electronic Library Online (Scielo). The VHL provides access to collections of major databases: Latin American and Caribbean Health Sciences (LILACS), International Literature in Health Sciences (MEDLINE), Spanish Bibliographical Index of Health Sciences (IBECS), Literature of the headquarters of the Pan American Health Organization Library - PAHO (PAHO), Publications of the World Health Organization - WHO (WHOLIS) Basic Nursing data (BDENF), among others [10].

A search using descriptors in the VHL (health descriptors) was firstly carried out. The descriptors that suited the theme were: "Parturition", "Safety" and "Patient safety". We chose to do the search using the key words in Portuguese and English. For a more targeted search, we chose to use a non-controlled descriptor, which in this study corresponded to "safe childbirth" concept.

They inclusion criteria adopted were: productions available in full-length in Portuguese, English, Spanish and French. There was no definition of the period, since it is necessary to study all productions available to elucidate the concept of safe childbirth. A brief reading was held, starting with the titles, in order to exclude those whose theme did not meet the expectations of the study. Later, there was a reading of the abstracts for a second exclusion. The productions that were repeated in the databases were also excluded. Using the selection tool, all productions resulting from crosses between descriptors
were adjusted, excluding repeated papers. Finally, the sum of articles from all available databases was subjected to the in-depth reading, excluding those that did not meet the subjects determined during the search of productions.

Initially, the cross between the Portuguese descriptors using the Boolean operator “and” was entered in the search field of the libraries for an advanced search, and in a second moment, the English words were inserted using the same operator. After application of the inclusion and exclusion criteria, 92 productions remained and were subjected to in-depth reading, 91 found in the VHL and one in Scielo.

Productions were submitted to thorough reading to find the essential attributes, their antecedents and their consequences, to correlate them and end with the creation of a model case and an opposite case. The findings guided the elaboration of the definition “safe childbirth”, so favoring the clinical practice.

With the studies that approached the goals of the study in hands, a tool for collecting information on the characterization of the studies was filled, containing the following data: title, authors, objectives, basic methodology, and site/country. We sought antecedents, attributes and consequences of the concept “safe childbirth” to meet the research questions. Some productions did not describe methodologies because they were news, consensus or operating manuals of the major world bodies on obstetric care and of the world health organization. The publications studied consisted of 32 productions; 31 found in the VHL and 1 in the SciELO library. Among these publications, only one was in French, and 31 in English language. There was no representation of the Portuguese and Spanish languages.

For a description of the search and selection of studies, the document Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA)11 was used, as shown in Figure 1.

![Figure 1: Flow chart of the study selection process. Fortaleza, Ceará, Brazil, 2016.](image)

After filling the instruments with the summarized information, the three-step integrative review was carried out: definition of the information to be extracted from selected studies/categorization of studies.

In the fourth step of the integrative review, an analysis of data critically seeking explanations for the different or conflicting results is done, and in the fifth step, the interpretation of information is held in order to meet the guiding research questions [9]. These two steps were effected and described in the analysis and discussion of the results where attributes, antecedents and consequences are described.
The further methodological steps of the concept analysis of Walker and Avant (four to eighth) are described in the results this study.

Results and Discussion
After completing steps one and two following the methodology of Walker and Avant [8] for concept analysis, we reached step three with the integrative review that delimits the possible uses, attributes, antecedents and consequences for the construction of the concept "safe childbirth".

Although the Portuguese, English, French and Spanish language filters have been selected among the included productions, only English and French articles were selected, since articles in Portuguese and Spanish did not correspond to the object of study.

As for the time, although this was not pre-established, the issue has been discussed only in the last five years, which shows that there has been a recent concern with this issue. In 2008, there was only one selected publication with the focus of disclosing a project for computerization of reporting and monitoring system of adverse events in obstetrics. According to the authors of this production, the concern for creating this system arose from a report published in 1999 by the United States and the United Kingdom, with the title "To err is human". It was noticed that deaths in childbirth are potentially preventable and most often are attributed to human factors [12]. Between 2010 and 2013, 14 publications were made available, though timidly, in which safety in maternity wards were analyzed.

The years 2014 and 2015 concentrated the largest number of publications on safe childbirth (16 studies). We believe that the issue has received this impetus after the release of randomized studies from the WHO conducted from November 2012 to March 2015 in 29 countries. These studies apply the checklist for safe childbirth and disseminate information on previous pilot studies conducted in India [1] and may have called the attention of Obstetric Assistance Colleges and Associations to the safety of delivery. There is a significant reduction in complications and mortality when the checklist for safe childbirth is applied.

Regarding the type of production, the majority (18) were original articles and reflective (02), descriptive (13) observational (02) and cohort-transversal (01) studies. Seventeen of these productions showed level five of evidence, and one, level three [13]. There were four worldwide manuals of Obstetric Care Colleges and Associations. Technical discussions about safety were also carried out in publishing letters and comments, corresponding to 10 publications.

The United States were the leaders on the number of publications, demonstrating a greater concern of these researchers with safety in childbirth. While analyzing the studies, the contrast between the quality of productions and the method applied in studies conducted in the United States and in other countries is notable. Brazil had one publication that added little to the theme. The focus given to studies conducted in Brazil has a more humanistic character, which excluded two studies submitted to in-depth analysis.

Regarding the use of the concept, Safe childbirth has been widely used in institutionalized obstetric (hospital) care. Home birth or the birth in centers is usually related to humanized birth. These kinds of births are referred by obstetric care institutions as unsafe, as any delivery performed outside the hospital environment, in view of the lack of equipment and professionals with qualifications to meet the common obstetric complications of childbirth. They believe that delivery must be accompanied with all the technological apparatus and technical knowledge to be considered safe [14].

The antecedents, essential attributes and consequences found to characterize safe childbirth are described in Figure 2.
This study points out that the responsible professionals need to have knowledge about the physiology of childbirth to carry out a safe childbirth, and must receive continuous education, strengthened with simulated training [15, 16, 17]. Caughey Alison, Cahill, Guise and Rouse [16] and Obstetric Care [17] say that doctors need training for monitoring dystocia. The use of simulation for recycling and ongoing maintenance of practice significantly contributes to reduce caesarean sections without clear indications, which are one of the biggest risks to delivery. Other antecedents highlighted were the identification of risks, potential damage or threats to health, and identification of dystocia related to childbirth.

In order to identify risks, potential damage and threats, antecedents were also considered and they can predict and enable professionals to plan the safe childbirth [18, 19, 20, 21]. Practices that favor patient’s risk assessment and better implementation of interventions to the knowledge of risk factors and lifestyle can lead to a safe childbirth [22, 23]. Harm reduction, error prevention and quality improvement are measures that require solutions in multiple dimensions. Threats to a safety issue cannot be worked alone. It is necessary to recognize the many gaps that imply flaws that led or could lead to adverse events [17].

Several factors can contribute to the occurrence of errors in obstetric care. These factors include, for example, multiple professionals who are involved in care (obstetricians, midwives, pediatricians), activities involved, unnecessary interventions, lack of communication among professionals, fears of litigation and, above all, low tolerance for errors [24].

The American College of Obstetrics and Gynecology consensus on effective prevention of primary cesarean sections highlighted professional experience and the ability of identifying and dealing with dystocia as relevant aspects. They strengthen relevant aspects such as the physiology of labor, because the professionals’ knowledge on this process is critical to provide assistance. They stress that it is important that the obstetrician have skills for operative vaginal delivery and know maneuvers that can make a version of the head in abnormal positions. The obstetrician should also know how to conduct a breech delivery, as this type of delivery involves less risk of severe complications than cesarean sections [17].

The most frequent attributes in the literature were communication and teamwork, safety culture/clinical protocols and monitoring of fetal heart rate and application of the checklist.

Lyndon, Zlatnik, Maxfield Lewis, McMillan, Kennedy [25] consider communication as important in...
childbirth care. Lack of communication affects safety aspects and the improvement of communication favors the establishment of safety culture and, consequently, improves the teamwork in perinatal contexts. Therefore, effective communication between team members and patients is one of the most reliable indications of safe care [26].

Another point has to do with the need of every professional to hear the concerns of the women and of other professionals. Communication on safety concerns involves more than just sending and receiving clinical data; it is a social and dynamic process that is highly dependent on the context and is influenced by multiple people, group, and organization factors. Listening, investigating and analyzing the inferred complaint leads to safer processes, since complications can be prevented [27].

Many adverse events that can lead to death of women during labor, what occurs due to problems in communication, in the teamwork and not as an individual human error [27]. We also emphasize that error related to communication flaws can be attributed to failure in communication between professionals, the woman and her partner. These gaps may lead to serious adverse events, particularly the deficiency in listening to the pregnant woman [28, 29].

Among the attributes found, identifying threats, the team’s empathy to share the concerns of the pregnant woman and access to thorough information about the procedures to be performed represent safe childbirth from the perspective of the woman. The woman feels safe from the moment that her complaints are heard, interpreted or reinterpreted and when her questions or problems are solved. Smythe [29] in her hermeneutic analysis on childbirth safety for women, realized that safety is something based on interpretation and rests upon the art of listening, or seeing. Listening to complaints, investigating them and finding solutions is reassuring to the mother and thus helps to establish an environment of trust and safety within the team.

As for monitoring fetal heart rate, Davis, Kenny, Doyle, McCarroll, Von Gruenigen [30] claim that the assessment and interpretation of fetal heart trace allows the realization of interventions that will be critical to safety in obstetric care.

In the analysis of productions, there is always the controversy as to which would be the safest place for childbirth. Nebaum et al. [31] reflect on the risks inherent in childbirth that can progress to deliveries with dystocia that will lead to serious maternal complications such as hemorrhage, eclampsia, infection and neonatal complications. In this way, they believe that giving birth at home implies a greater risk for women. However, in the in-depth reading, it is evident that childbirth safety is more related to the communication, knowledge, experience and continuous training of those who attend the delivery, whether the nurse, doctor or midwife [16, 17].

The positive influence of clinical protocols in the conduct of labor and delivery is also notice. These are guidelines with homogeneous approach to common problems. They promote the standardization of processes within a unit allowing clinical improvement and satisfactory results for service [27].

The checklist was mainly cited in studies of the last two years. WHO published in 2015 the Checklist of safe childbirth as an implementation guide. Preliminary studies applying this instrument in 29 countries had already been conducted. After application, actions of delivery care have been carried out [30].

This implementation guide is designed to take steps to be followed in an appropriate way to ensure patient safety. Legally, checklists reflect good results with strong scientific evidence. However, clinical judgment by professionals is not replaced by checklists and guidelines. Clinical guidelines and checklists should not be treated as absolutely correct and applicable to all. Depending on the clini-
cal condition of the patient, it may contraindicate the application of the list and the professional must make appropriate decisions for each case. Therefore, professional knowledge, experience, and clinical judgment are paramount for safe care. Health professionals cannot be linked to autopilot, this is confused with childbirth care [31].

Among the factors that imply risk for mother and child, evidence shows that cesarean delivery is the most complex. This must have express indications for its accomplishment. Therefore, in addition to the checklist to minimize the risks of operative delivery, the consensus for the prevention of primary cesarean section shows the risks to which the women are exposed, demonstrating the necessity of their accomplishment in an extreme situation. A Canadian study showed that women have a greater chance of bleeding with subsequent hysterectomy or transfusion, uterine rupture, anesthetic complications, shock, cardiac arrest, acute renal failure, assisted ventilation, venous thromboembolism, hospital infection, or hematoma and wound dehiscence. This risk is increased three-fold compared to normal delivery [16].

Since cesarean section implies risk to mother and neonate, the Obstetrics Consensus for the Safe Prevention of Primary Caesarean section indicates the safe use of oxytocin in the prolongation of the first stage of labor, as well as the accomplishment of operative vaginal delivery in the second stage prolongation. Twin pregnancies, pelvic presentation and fetal macrosomia are also not direct indications of cesarean section. These indications should be made in these situations: stop the progression of labor for more than 20 hours in nulliparous women in the first stage of labor and over 14 hours in multiparous women; In the second phase two hours in multiparous and three in nulliparous; Pregnancy with indication of cesarean section due to fetal macrosomia should be performed when the fetus is over 4500 g in a diabetic mother and in non-diabetic mothers above 5000 g. The obstetrician should also conduct the deliveries with anomalous fetal positions or if necessary make the external version in fetal presentations contrary to cephalic [17].

The consequences found related to safe childbirth were: reduction of maternal complications, reduction of maternal and perinatal mortality, good fetal vitality and maternal favorable conditions.

Although global efforts have been made to reduce maternal mortality, this event is still part of the everyday routine of professionals worldwide. In 2010, 287,000 women died during pregnancy and childbirth and 2.6 million stillbirths occurred worldwide [31]. In 2013, 289 thousand women died and 2.8 million newborns came to death within 28 days after birth [1]. This data shows that safety policies should be institutionalized so that these numbers are reduced.

Over the last decade, global efforts have been made to improve maternal and newborn health. Pregnancy and perinatal outcomes are important health indicators. Maternal and child survival is one of the Millennium Development Goals for the health of women and children. In addition to the high maternal and neonatal mortality observed, the high fetal mortality of 2.65 million worldwide is also considered relevant [33].

Because most of these deaths occur during labor, delivery and the postpartum period, there is a requirement for the provision of high-quality care and facilities, especially in low- and middle-income countries. It is believed that it is possible to end preventable maternal deaths and neonatal and stillborn deaths when actions such as safe childbirth are implemented [33]. The overall goal to reduce preventable maternal mortality is to minimize at less than 70 maternal deaths per 100,000 live births by 2030, and to ensure that no country obtains a maternal mortality ratio of > 140 deaths per 100,000 live births [34].

The overall objectives for reducing neonatal mortality are to achieve a ratio of 7 per 1000 live births
to 2035 with a ratio less than or equal to 10 per country. For stillbirths, the goal is to achieve 10 or fewer fetal deaths per 1000 births also by 2035 [33].

For the evaluation of neonatal well-being, in 1953 Virginia Apgar constructed a score that evaluates the neonate considering the clinical conditions of birth. This "Apgar" score assesses heart rate, breathing, muscle tone, reflex irritability and coloring of the skin. For each one of them is assigned a score of 0 to 1 and the sum can confer good neonatal vitality. The overall score for conventional Apgar ranges from 0 to 10. A depressed neonate is considered to have a score of < 7. Therefore, one of the tools used and used for assessing neonatal well-being is the Apgar score, evaluated in the first and Fifth minute of life [35].

When it comes to maternal conditions favorable to childbirth, ie women in low-risk conditions, the evidence suggests that childbirth planning may occur with less intervention and may be accompanied at home. For high-risk women, maternal and neonatal outcomes can be improved by monitoring the conditions of both [36]. Childbirth safety is linked to childbirth planning, considering maternal and fetal conditions to ensure the well-being of both after childbirth.

**Conclusion**

In Brazil, studies are still incomplete and focused on humanized birth, which has equal relevance, but does not always guarantee the necessary safety. Besides humanized attitudes, professionals need to have the expertise to know how to identify risks during childbirth and prevent unnecessary damage caused by inadequate care.

Although the integrative review has been carried out following the methodological steps proposed for the literature search of all articles available on the chosen theme, the lack of studies demonstrating the clinical practice of safe childbirth is evident and represents one limitation of the study. Randomized clinical trials or studies are necessary to identify potential risks that bring harm to the patient. These studies encourage changes in practice leading to safe care in childbirth.

Although there is a movement towards safety in childbirth care, the authors listed in this study also have different perceptions on the concept of safe childbirth.

WHO already has tools such as the checklist for safe childbirth. However, it is observed that the understanding of the physiology of delivery related to care in the check-list is something that may favor safe childbirth.

The concept analysis led to an in-depth study on the topic, showing that there was no concrete definition for this concept in the studied literature. From
the analysis of essential attributes, its antecedents and consequences, it was possible to define the concept. However, it is worth considering that the concept is changing and that the practice of safe childbirth is something distant from many world realities. The United States is ahead in this field of research. Safe childbirth practices are more solid in this country. United States is ahead in this field of research. Safe childbirth is something distant from many world realities. The concept is changing and that the practice of safe childbirth concept.


