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# Childcare Before Birth: The Role of the Pediatrician

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## Abstract

In all phases of their growth and development, from conception to senility, the human being counts on different care in health promotion and disease prevention offered by professionals through health care programs at different levels of care. Specifically in child health care, pediatricians have a fundamental role and their work, traditionally, starts from birth and develops for two decades, until their patient reaches adulthood. This article highlights a set of activities that the pediatrician can initially offer to the woman and the family, since the preconception period, and accompanying the entire pregnancy, called Antenatal Childcare.

**Keywords:** Puericulture, Childcare, Antenatal Care, Pediatric Health Care

## Introduction

Since conception to the end of puberty, the human being goes through different stages of growth and development (embryo, fetus, newborn, child, adolescent, and adult), each with specific characteristics and which, succeeding harmoniously, will take to the stage of final maturity, that is, the adult individual.

From the medical point of view, so that each stage of life is overcome in good condition, it is necessary to incorporate health care that can help human beings to overcome obstacles and face adversity, in order to reach the next stage and continue their evolution. Preventive pediatrics, and especially primary health care, has as one of its objectives to promote the physical, mental and social well-being of children and adolescents through interaction between doctor-child-family, in an effort to prevent harm and promote health for all, because children reside in families and their care must involve family members and caregivers who maintain responsibility for daily contact with children (Pratt K, van Forsen, Didericksen, Amar & Berge 2018).

In this context, one of the most important activities developed by the pediatrician is the so-called anticipatory guidance, that is, a counseling technique that focuses on the needs of children at different stages. Anticipatory guidance is one of the bases of primary care pediatrics, as it provides parents with information about the expected development of children and issues related to safety and health promotion (Barkin, Scheidlin, Nrown, Ip, Finch & Wasserman 2015).

Childcare has long been practiced as a health activity that aims to provide longitudinal, and continuous monitoring, in which experienced pediatric professionals perform skillful observations of children during child health meetings with the mutual participation of parents and health professionals in the discussion about childcare (Lurshay 2017). In other words, childcare comprises a set of rules of action aimed at children to achieve the maximum of their potential capacities and avoid harmful actions that may affect them (Suchder & Howard 2018).

#### Antenatal care

From the beginning of the 20th century to the present, health care for pregnant women and the fetus has achieved many advances worldwide with the incorporation of actions and programs for the prevention of health problems and health promotion (Al-Gailani, Davis 2014 & Yan 2020). Prenatal care is a standard for preventive, health promotion, diagnostic and curative actions simultaneously during pregnancy, aiming at maternal and child outcomes and reducing complications in childbirth and postpartum (World Health Organization 2016, Le Tinier, Billieux, Pfister, De Tejada 2020, Andrade-Romo, Heredia-Pi, Fuentes-Rivera, Alcalde-Rabanal, Cacho, Jurkiewicz et al 2019, Leal, Esteves-Pereira, Viellas, Domingues, Gama 2020). The care offered to the pregnant woman follows protocols that are developed by obstetricians, general practitioners and nurses and follows defined protocols both for situations of normal pregnancy and for cases with complications or considered to be at higher risk

#### The pediatrician and the puericulture

Pediatric practices are unique among medical specialties because the child always requires the presence of parents when seeking medical assistance. Therefore, the role of the pediatrician with the family must begin when the couple plans the pregnancy (Schor 2003, Martins 2008).

The period of the first 1000 days of life (which begins at conception and ends when the child is two years old) is fundamental to the health of the child and the future adult, since growth and development are subject to many influences that can determine their future standard of living (Szostak-Wegierek 2014, Blackmore & Ozanne 2015, Cunha, Leite, Almeida 2015, Fall & Kumari 2019, Lacagnina 2019, Villares, Collado, Larqué, Trabazo, De Pipaón & Aznar 2019, Humphrey, Hagan, Suresh & Sundgren 2019). The birth, which marks the passage of the gestational period to the outside world, represents an exchange of environment and relationships, establishing two phases that deserve the attention of health professionals. While for the second phase, that is, after birth, childcare is directed at the child, for the previous phase, during the gestational period, pregnancy care is basically practiced by obstetricians and general practitioners.

In their role as advocate for children and families, pediatricians are in position to help parents during the gestational period, establishing a relationship of trust and support at this stage of life (Ioannides 2017). Thus, during the gestational period, the participation of the pediatrician in the development of preventive activities with the trinomial pregnant-fetus-family is fully feasible, which can be called Antenatal Childcare. These activities, with specific objectives and different from those of the traditional prenatal, will occur in parallel with the care offered by the care program for pregnant women, and should start from the stage of pregnancy planning, with the preconception consultation.

#### Preconceptional care

Preconceptional care is the first stage of the Antenatal Care. Medical care during the pregnancy planning period is a fundamental step in health actions that aim to contribute to the quality of life of the mother and the fetus. In this service, information is gathered to identify and modify, whenever possible, individuals at risk of having children affected by genetic conditions or congenital anomalies, reproductive risk factors, in addition to treating diseases that may alter the natural evolution of pregnancy (Brundage 2002, Brent 2011, Konje 2018, Dorney & Black 2018, Griejer 2020). Before their infant is born parents may be concerned about risks of some environmental exposures, hereditary diseases and other factors that may interfere with pregnancy. Therefore,

advising parents on these aspects requires the participation of the pediatrician as the doctor who for a long time will interact with the family offering health care to the child from conception. In this sense, the objectives of preconception consultation are (Wilkinson & Carroll 2018, Pacheco 2020, Chun, Leung, Wen, McDonald & Shin 2020, Oie 2020, Miller, Anderson & Lindley 2020):

- a) Obtain information on genetic and / or chromosomal abnormalities and history of previous neonatal losses;
- b) Genetic counseling regarding inbreeding, inborn errors of metabolism, ethnicity;
- c) Reduce birth defects due to advanced or low maternal age and advanced paternal age;
- d) Know aspects related to the parents' occupation and exposure to radiation or toxic chemical elements;
- e) Nutritional habits and harmful lifestyle (alcohol, tobacco, drugs).

All information obtained during this service serves to support counseling and actions that must be implemented already in the preconception period and continue throughout the pregnancy.

### **Antenatal Childcare**

After the pregnancy is confirmed the pediatrician starts to relate to the future mother and family directing educational activities, health promotion, and anticipatory guidance with objectives to serving as a reference and offering support. The direct participation of the pediatrician during pregnancy aims to (Cronin 2003, Leal, Esteves-Pereira, Viellas, Domingues & Gama 2020):

- a) Establishing the relationship physician-family and starting child health care before birth; stimulating the mother-child bond. Parents are the most central and enduring influence in children's life and their interaction with pediatricians is fundamental for the good development of the child
- b) Identifying needs and difficulties of first-time mothers; clarifying about perinatal events (hospitalization, type of delivery, nursery, rooming-in); understand concerns and doubts and help increase the safety of pregnant women with emotional support
- c) Providing information and advice, building parenting skills for mothers and fathers
- d) Identifying high-risk situations: (adolescent mother, single mother, domestic violence, harmful habits such as alcohol consumption, smoking, drugs of abuse)
- e) Assist and facilitate the relationship with the obstetrician regarding the preparation of the pregnant woman for childbirth
- f) Advise on the importance of puericulture

The number of meetings and its frequency can be flexible, varying according to the needs or interests of the pregnant woman. In order that a minimum program can be developed, a list of topics to be discussed at each meeting should be offered, as described below:

- a) Early mother-infant interaction:  
Mother-infant bonding (M-Ib) is defined as the emotions and feelings experienced by a mother toward her child, with mutual influences by hormonal mechanisms that start in the utero and continue after birth by way sensory stimulation (skin-to-skin contact, visual, olfactory, etc) and that contribute to the adaptative changes in both mother and child (Daglar & Nur 2018). M-Ib is considered important for a positive socio-emotional-development because it serves as a model for various relationships in later stages of life (Tichelman, Westerneng, Witteveen, van Bar, van der Horst, Jong et al. 2019). Furthermore, this interaction increases the child's protection against abuse, neglect, and domestic violence, consolidating the child's social role in the family (Saisto & Halmesmaki 2003, Loundes, Borkowski & Whitman 2006, Miller 2011, Coskuner, Mamuk, Dermici & Hamlac 2017, Glover & Capron 2017, Farré-Sender, Torres, Gelabert, André, Roca, Lasheras et al. 2018, Kayris 2020, Gressier, Letranchant, Glatigny-Dallay, Fallisard & Sutter-Dallay 2020, Brannigan, Tanskanen, Huttunen, Cannon, Leacy & Clarke MC 2020).
- b) Assist in the preparation of motherhood  
Some pregnant women not yet had any preparation for motherhood. Thus, this motherhood preparation can start during the gestational period especially in cases of unplanned pregnancy, to avoid rejection and

prepare to offer the necessary care to the newborn (Cronin 2003, Javadifar, Majlesi, Nikbakht, Nedjat & Montazeri 2016, Brummelte & Galea 2016, Osono-Castaño, Carvajal-Carrascal & Rodriguez-Gazquez 2017). The principal objective is to improve understanding, involvement, and satisfaction with pregnancy and the neonatal period since maternal and family parenting style is essential for a health maturation of an infant's cognitive, behavioral, and social skills (Atrash, Johnson, Adams, Cordero & Howse 2006, Miller 2011, Walsh 2020).

c) Birth planning and postpartum feelings

Patient should be informed about care options and participate in decision making regarding the type of delivery, possibilities of the parents' presence during delivery, and regulation of rooming-in and nursery (Demsas, Svetina, Verdenick, Tul, Blickstein & Velikonja 2017, Nieuwenhuijze & Leahy-Warren 2019). Such guidance aims to reduce the anxiety and fear that unknown situations can cause in this stage of pregnancy. Some patients have tokophobia (fear of childbirth) – psychological disorder which ranges from insignificant to extreme fear of childbirth (Bell & Andersson 2016 and need to be supported more carefully to avoid situations that may interfere with childbirth).

It is also essential to develop actions aimed at preventing postpartum depression, a problem that affects 10 to 15% of women and impairs mother-infant interactions. This condition has multifactorial causes (interaction of adrenal, placental, sex, and peptides hormones) and neurobiological mechanisms, and when present, it must be identified as early as possible and treated appropriately (Desauny, Perrin & Gerardin 2016, Binns, Lee & Low 2016, Walsh 2020).

d) General childcare issues

1. Breastfeeding: the antenatal period is an excellent opportunity to provide guidance on breastfeeding, highlighting the benefits for the child and the mother and demystifying cultural aspects that may interfere with this practice. Breastfeeding is the most important and effective action for the child's good health, contributing to reduce childhood morbidity and mortality (Mosca & Gianni 2017, Bunik 2017, Meek 2017, McClure, Cataldi JR & O'Leary 2017, Sattari, Serwint & Levine 2019, Qesaja, Méndez & Martin-Gil 2020,
2. Vaccines: advise on the importance of vaccines for protection against infectious diseases, resolving doubts and fears about their effectiveness and safety, and increasing vaccination coverage (Nitsch-Osuk 2017, Schaeffer & Asnes 2018, De St Maurice, Edwards & Hackell 2018, Kennedy 2020, Charron, Gautier & Jestin 2020). In addition to the vaccines that must be applied to children, vaccination of contact persons is a strategy to avoid risks (cocoon vaccination), immunizing adults to preventing the spread of an illness in children, to minimize the risk of transmission of pathogens in the environment of a patient who is susceptible to an infection (Le Tinier, Billieux, Pfister, De Tejada 2020, Kennedy 2020).
3. Accident prevention: non-intentional injuries are an important preventable cause of morbidity and mortality in infancy and the best way to reduce its impact on the lives of children and family members is the prevention. According to the different stages of the child's neuromotor development, guidance should be offered on protection against falls, intoxication, asphyxiation, burns and drowning (Ehrhardt, Xu, Khoury, Yolton, Lanphear & Phelan 2017, Weismiller 2017).
4. Neonatal screening: advise on the tests that are part of the neonatal screening and its importance to detect disorders that are threatening to life or long-term health before they come symptomatic. These include hemoglobinopathies, congenital heart defects, hearing loss, inborn errors of metabolism, cystic fibrosis, immunodeficiencies, and endocrine disorders (Barca, Mazzuca & Borghi 2017, Therrell & Padilla 2018).
5. Newborn physiology: resolve doubts regarding physiological issues of the newborn such as crying, breathing pattern, infantile colic, reflexes and neuromotor development, care for the umbilical stump, sleep, pacifier, evacuation habit, bathing, more appropriate clothes and mental hygiene (Johnson & Hunt 2019, Shimko 2019, Paladinen, Blenning & Strangas 2019). These are aspects whose ignorance can generate anxiety and motivate the search for information in inappropriate sources on the internet, at the risk of misinterpreting due to the lack of medical and scientific terms

(Paladinen, Blenningn & Strangas 2019, Kumar, Biswas, Lyengar & Kumar 2015, Kodman 2018).

## Conclusions

Pediatricians are the first caregivers for babies after hospital discharge and probably the first doctors that mothers see after birth (Sayres & Visentin 2018). However, childcare starts long before the baby is born, as many social, cultural, emotional, biological, demographic, and economic factors influence child health from conception.

Therefore, it is essential that actions are developed to reduce maternal and child morbidity and mortality by anticipating preventive measures associated with prenatal and childcare (Aris, Fleisch & Oken 2018). In this context, during the gestational period the pediatrician can play an important role as an educator with the pregnant woman to expand self-care and assist the future mother with the difficulties inherent to the neonatal period.

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