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## **THE CONTRIBUTION OF NURSING INTERVENTION IN THE STUDY OF TOUCHPOINTS MODEL'S EFFICACY**

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*The real voyage of discovery consists not in seeing new landscapes, but in having new eyes.*

Marcel Proust



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## **Abstract**

The quality of the relationship between parents and children is strongly associated with cognitive, motor, linguistic and emotional dimensions of human development, as well as with child's socialization. On a daily basis, parents provide their children with opportunities for learning and development. These are provided within their regular contexts, according to limits established for those learning experiences. The way parents interact and accept the child way of being and the way they act as models for their child are part of this learning and development process. Parenthood is a challenging task and healthcare professionals are the first to accompany families. Subsequently, nurses can strengthen parental skills and help them develop positive strategies departing from a new representation of childhood development. With this study we aim to assess the impact of clinical nursing intervention using the Touchpoints approach in the mother-child interactive behavior and child development between the first and the second year of life, framing this methodology as a technique likely to be enrolled in nursing practice. We conducted a quasi-experimental study, in which we applied the methodology Touchpoints at 12 and 18 months. 86 families participated in this study and were distributed in the Group with Intervention (GI), and in the Group without Intervention (GWI). Before and after the intervention, several variables were evaluated, namely: child development, the quality of mother-child interaction in free play, maternal representations about the child's behavior. In addition to the initial sample, a third group of 40 families with children 24 months was included at the end of the study, being designated as Group without Intervention or Monitoring. This group participated in the application of the Parents-Caregivers Relationship Scale. Our final sample was therefore compounded by a total of 126 families and the 2 nurses who implemented the TP methodology. The results indicated that child development was associated with the quality of mother-child interaction. Few studies have succeeded in obtaining direct links between such measures and emphasize the importance of relational aspects in child development. The Touchpoints intervention significantly increased parental satisfaction in Group with Intervention, also when compared to Group without Intervention. Finally, Touchpoints intervention had an impact on child development, parent-child relationship quality and once more, in the parents' satisfaction. Based on the findings of all studies included in this doctoral dissertation and project, we sustain the thesis that the implementation of Touchpoints model by nurses: (i) improves parents' and nurses' satisfaction; (ii) facilitates the process of parenting; (iii) improves the perception of nature and quality of the parents' relationship with the nurse,

both on parents and nurses' views; (iv) benefits child development, mother-infant interaction quality and maternal representations about the child and motherhood, particularly in the presence of biological or environmental risks.

Key words: Parents-Nurse Relationship; Parenting; Touchpoints methodology; Satisfaction; Infant development.

## Resumo

A qualidade da relação entre pais e filhos está fortemente associada ao desenvolvimento cognitivo, motor, linguístico, afetivo bem como a sua socialização da criança. Os pais oferecem oportunidades diárias de aprendizagem e desenvolvimento no espaço dado à criança para experimentar aprendizagem, nos limites traçados a essa experimentação, na forma como se relacionam e aceitam a criança e nos modelos que oferecem. A parentalidade é uma tarefa desafiante e os profissionais de saúde são os primeiros a acompanhar as famílias. Neste sentido, os enfermeiros podem reforçar as competências dos pais e ajudá-los a desenvolver estratégias positivas partindo de uma nova representação do desenvolvimento infantil. Com este estudo pretendemos determinar o impacto da intervenção clínica de enfermagem através da metodologia *Touchpoints* no comportamento interativo mãe-filho e no desenvolvimento entre o 1º e o 2º ano de vida, enquadrando esta metodologia como técnica susceptível de ser inscrita na prática de enfermagem. Neste estudo quasi-experimental, aplicámos a metodologia *Touchpoints* aos 12 e 18 meses, a 86 famílias, igualmente distribuídas em Grupo com Intervenção e Grupo sem Intervenção. Antes e após a intervenção avaliamos o desenvolvimento infantil, a qualidade da interação mãe-filho em jogo livre, as representações maternas acerca do comportamento da criança. Neste sentido procurámos estudar a influência da intervenção *Touchpoints* no desenvolvimento infantil, na relação mães-filhos e nas representações maternas acerca do comportamento do filho. Para além desta amostra, no final do estudo foi incluído um terceiro grupo de 40 famílias com filhos de 24 meses, designado de Grupo sem Intervenção ou Acompanhamento. Este grupo foi incluído na aplicação da escala de avaliação da qualidade da relação pais-enfermeiros, Neste sentido, a nossa amostra perfaz um total de 126 famílias mais os 2 enfermeiros que aplicaram a metodologia de TP. Os resultados indicaram que o desenvolvimento infantil se associou com a qualidade da interação mães-filhos. Poucos estudos conseguiram obter relações diretas entre medidas desta natureza e reforça a importância dos aspetos relacionais no desenvolvimento infantil. A intervenção *Touchpoints* aumentou significativamente a satisfação dos pais no Grupo com Intervenção comparativamente ao Grupo sem Intervenção. Por fim, a intervenção *Touchpoints* teve impacto no desenvolvimento infantil, qualidade da relação mãe-filho e, mais uma vez, na satisfação dos pais. Com base nestes resultados nós defendemos a tese de que a implementação do modelo *Touchpoints* por enfermeiros: (i) aumenta a satisfação dos pais e dos enfermeiros; (ii) facilita o processo de parentalidade; (iii) melhora a percepção da natureza e qualidade da relação pais-enfermeiro, quer na perspetiva dos pais quer dos enfermeiros; (iv) beneficia o desenvolvimento infantil, a

qualidade da interação mãe-filho, as representações maternas acerca da criança e da maternidade, particularmente nas situações em que existe risco biológico ou ambiental.

Palavras chave: Relação pais-enfermeiro(a); Parentalidade; Metodologia Touchpoints; Satisfação; Desenvolvimento infantil.



## **CHAPTER I – Introduction**

### **1.1- Introduction to the study topic**

Efforts to safeguard and enforce children's rights and investing in the early years of life have been a priority of the World Health Organization and other global organizations dedicated to children, including UNICEF. In Portugal, this area has also been receiving attention particularly through the definition of a set of regulation by the Ministry of Health (2012), Directorate-General of Health (2013) and Ordem dos Enfermeiros (2010).

Society expects parents to be the main responsible for child care, including the physical, nutritional, educational, emotional and psychological of care. However, the experience of parenting is embedded in strong emotional ties characterized by anxiety, stress and guilt that can contribute to a parents' period of uncertainty, fatigue and, in some cases, disappointment (Relvas, 2000; Relvas, 2004).

In fact, pregnancy and the birth of a child represent significant changes in most human being's live. This event leads to changing roles (defining parental and affiliation roles) and to redefine the limits of mother/father roles to the outside world, including the origin family and community (most significant contexts: professional, friends and social network support). Therefore, the transition process requires an individual (parental and family) readjustment and reorganization that has an impact on their own development process (Janisse, Barnett, & Nies; Meleis, 2010). According to some authors, including Oliveira et al. (2005), the birth of a child is considered one of the major moments of transition in life, being responsible for changes in different levels, including individual, marital, family and social.

During the exercise of parenting, parents can use the resources of their own support system (e.g., family and community) in order to promote the development of children to the fullest (Cruz, 2005). Health services and its professionals, particularly nurses, play a key role in this particular period of human life by monitoring and providing support to the child and parental figures, throughout the whole child's development process and exercise of parenting, whereas they are the professionals who first contacted, accompany and are closer to the family, long before other professionals (e.g., education, early intervention). The International Council of Nurses (ICN) recognized that parenting is a major focus of nurses' attention, considering it as a nursing care focus with high sensitivity to nursing practice and intervention (ICN, 2006). This reinforced nurses' responsibility to ensure the provision of high quality care responding to children and parents' needs, contributing to their satisfaction. This, however, requires the professional mastery of technical and

personal skills combined with the use of effective and rewarding intervention methodologies.

Moreover, and as a complement to the National Child and Youth Health Program, developed by the Directorate General of Health (Portugal, 2013), the Ordem dos Enfermeiros (2010) produced a “Best Practice Guideline”, which emphasizes the need for effective intervention methodologies that can help to create optimal conditions for parental autonomy providing them with the basic knowledge and skills necessary for the full performance of parenting.

The Touchpoints methodology (TP), developed by Berry Brazelton (1992) and conceptualized on the basis of clinical practice and the results of scientific research, recognizes child development as a process taking place with advances and regressions. This developmental model is organized around a sequence of child development key-moments – the so-called Touchpoints – which imply changes in the life and dynamic of the family. Although unexpected, these critical periods can also be perceived and experienced as opportunities for professionals to narrow and strengthen their relationship with parents, helping them to cope with the challenges of those key-moments and to build their relationship with the child (Brazelton & Sparrow, 2005; Brazelton & Sparrow 2006). Thus, this methodology is associated also to the relational model that underpins and guides the relationship established between professionals and families, which is based in trust, empathy and partnership. These components will influence child development and contribute to the intervention success (Brazelton & Sparrow, 2005; Brazelton & Sparrow 2006). Evidence shows that by using the TP model professionals can naturally join to the family system in which the child is involved. In this intervention model, professionals’ role focuses on the support, collaboration, monitoring, and strengthening of family skills, recognition of its forces and capacities by anticipation times of disruption and disorganization. Through an approach that focuses on individualization, collaborative prediction, shared description, and negotiation plan and advice, professionals are able to promote children’s healthy development and early learning (Amy, 2001; Karl, 2004; Lester, & Sparrow, 2010; Percy, 2006; Stadtler, Brandt, Novak, & Beauchesne, 2013).

The results of a research conducted in Portugal on the transition to parenthood, suggested that planned and intentional nursing interventions are scarce in health services albeit extremely necessary to support parents/families in specific periods of vulnerability, such as parenthood and infancy (Soares, 2008). However, little is known about the use of specific intervention models, such as the TP methodology, by nurses. We may therefore assume the relevance of studying the effectiveness of the Touchpoints model by nurses, namely by focusing on its impact in the following dimensions: child development, quality of

mother-child relationship, maternal representations about the child temperament, satisfaction of parents and nurses.

## **1.2- Aims**

From a nursing perspective, and considering the potential effects of implementing the Touchpoints methodology by nurses in Primary Health Care Services on mother-infant quality relationship, child development, mother representations of child temperament and behavior, parents and nurses' satisfaction, the main purpose of this research project is: (1) To assess the impact of clinical nursing intervention through the Touchpoints approach in the mother-child interactive behavior and child development between the first and the second year of life, framing this methodology as a technique likely to be included in nursing practice.

Based on this main objective, the following research question was raised: (1) What is the impact of clinical nursing intervention through the Touchpoints approach in the mother-child interactive behavior and child development between the first and the second year of the child's life?

Associated to this main purpose and research question we defined specific objectives that we aim to respond in this study. The objectives are:

- (1) to investigate how mothers interact with their children and the influence such relations have in children development;
- (2) to investigate whether the Touchpoints intervention affects the quality of mother-child interaction;
- (3) to investigate if rates of child development improves in the group with Touchpoints intervention;
- (4) to investigate if maternal positive representations about their child and about their role improves in the group with Touchpoints intervention;
- (5) to analyze if family satisfaction with health services increases in the group with Touchpoints intervention;
- (6) to understand the impact of clinical nursing intervention through the Touchpoints approach in the mother-child interactive behavior from the parents' perspective.

This doctoral dissertation was developed as part of a wider project of a quasi-experimental study about the effectiveness of clinical nursing intervention through the Touchpoints approach in the mother-child interactive behavior and child development between the first and the second year of life, framing. However, given the extension of the comprehensive analysis and due to the fact that this dissertation is developed within a

doctoral program in nursing sciences, we have chosen to focus it in the context of parents and nurses' perceptions, experience and satisfaction with the relational dimension developed with during the implementation of Touchpoints methodology.

### **1.3- Concepts definition**

For the present study considered:

Touchpoints intervention/methodology: is a preventive intervention methodology that aims at (i) supporting the parent-child relationship, (ii) increasing parenting skills and (iii) strengthening the relations between the family and the baby. TP are expected periods preceding the motor, cognitive or emotional child development. These periods can cause predictable disruption in family relationships. The development affects the child and caregivers simultaneously and it is characterized by periods of change that imply adaptation (from child and family). This can cause disorganization within the family system and relationships. Healthcare professionals can help the family to experience and cope with these periods, facilitating the transition process. Touchpoints methodology includes guiding principles (Brazelton & Sparrow, 2006; Portugal, 2013). The succession of touchpoints in a child development is like a map that can be identified and anticipated by both parents and care providers. They are much more focused on care provision of topics of interest to parents (e.g., food, discipline) than in traditional milestones (e.g., crawling, walking). Negotiations with the child in connection with these touchpoints can be seen as a source of satisfaction and encouragement for the family system. Prior knowledge of these touchpoints and strategies to cope with them can help parents by reducing the negative interaction that otherwise could harm the course of child development and result in problems in different areas (e.g., sleep, food and toilet training) (Brazelton & Greenspan, 2005; Brazelton & Sparrow, 2006). Besides assuming a developmental model, Touchpoints methodology is grounded in a relational model and therefore associated to establishment of interpersonal relationships.

Maternal sensitivity: is defined as a mother's ability to perceive and to accurately interpret the signals and communications implicit in her infant's behavior and, given this understanding, to respond to them appropriately and promptly (Ainsworth, Bell, & Stayton, 1974). Maternal sensitivity reflects a dyadic interaction and therefore is meaningless without the consideration of both partners (van den Boom, 1997) and is a dyadic (mother-infant bi-directional) and relationship-based construct (Claussen & Crittenden, 2000).

Child cooperation: children express their feelings openly, and use social and play experiences as opportunities to learn and develop, in normal interactions (Ainsworth et al. 1978; Goldberg, & DiVitto 1995).

Child development: refers to changes or growth that occurs in different areas (e.g., physical, locomotor, cognitive, social, emotional, language, self-care social...) during the life span from birth to adolescence (Sheridan, 1997). These changes occur in sequence of predictable developmental spurs and regressions (Brazelton & Sparrow, 2006) and takes place gradually but with differences in the rate or timing of the changes from one person to another.

Mother's representation of child temperament: Temperamental factors interfere in the processes of building a person personality, and affect human development both considering individual patterns of emotional and behavioral regulation adjustments. The way parents appraise and interpret the child's behavior is associated with idiosyncratic representation criteria, distorting the evaluations according to personal expectations, social desirability criterias or other factors (Sandino, 2003 cited by Lopes-dos Santos, Fuertes, Sanches-Ferreira, 2005). Hence, and with greater or lesser intensity, parental evaluation and perception of children temperament involve components of subjective distortion (Lopes-dos Santos, Fuertes, Sanches-Ferreira, 2005). In cases where parental evaluation and perception are less objective, parents tend to take a prognostic value of temperamental factors. This may lead to the occurrence of difficulties in the adaptation and adjustment of the relationship between parents and their child.

Satisfaction: is a concept underpinned in a multidimensional and subjective perspective influenced by different conditions (Cruz & Melleiro, 2010; Santos, 2009). It reflects the express subjective assessment regarding the fulfillment of certain goals or needs based on his level of aspiration or expectation.

#### **1.4- Outline of the thesis**

This doctoral dissertation focuses on the implementation of Touchpoints (TP) methodology by nurses in a Primary Health Care Center in Terceira Island, Azores, Portugal. This topic is studied from different perspectives, using and combining different methodologies.

In this first chapter, the background of this study is briefly presented, highlighting the need for further research on the implementation of TP methodology by nurses and its integration as part of nursing care and practice. The purpose, objective, research

questions and hypothesis are described and, in this section, we provide the reader with the outline of the thesis.

Chapter two describes the state of the art, including the theoretical and scientific background related to nursing and parenting, the methodologies and approaches commonly applied by nurses when intervening in promoting child health, the description of the Touchpoints methodology, emphasizing its conceptual and theoretical framework and the role nurses can have in the implementation of the methodology in specific context practice.

Chapter three reports the methodological options applied to this research project, namely: the type of the overall study and its justification, aims, questions and investigation hypothesis, methods applied to each specific study of this broader research project and ethical considerations.

Chapters four, five, six, seven and eight are original studies elaborated in the context of this research, which describe the findings of this research, as follows:

Chapter four entitled “Contributions for the Portuguese adaptation to nursing care of the Parents-Caregivers Relationship Scale - parents’ version” aims at describing the process of adaptation of the Parents-Caregivers Relationship Scale (PCRS) for nursing care. This chapter also demonstrates the results of the study of psychometric properties of the adaptation of PCRS into Portuguese and the results of the study about the quality of the relationship between parents and nurses who perform the child's health surveillance.

Chapter five comprises a research study focused on the associations and determinants of infant development and mother-infant quality of interactions in Portuguese dyads. In this study the determinants of mother-infant quality of interaction and infant development were investigated considering a several infant and family factors;

Chapter six, entitled “The impact of Touchpoints intervention on parental perception of the quality and promotion of the relationship with nurses”, aims at studying the impact of the Touchpoints intervention on parental assessment of the relationship with the nurse who performs the child's health surveillance;

In Chapter seven we integrate the study “Touchpoints’ by nurses: impact on maternal representations, child development and mother-infant interaction quality” which comprises the comparative study of the two groups related to the impact of Touchpoints on the intervention group and non-intervention group related to mother-infant quality of interaction, infant development, maternal representations of child temperament;

In Chapter eight we integrate the study “*Touchpoints*”: parents and nurses’ perceptions and satisfaction, which aims at understanding how parents and nurses involved in the implementation of the TP methodology perceive the experience of participating in this implementation and how it affects their sense of satisfaction.

As these chapters will be written in an article-format, references’ style will be aligned with the scientific journal to which each correspondent manuscript has been submitted.

The last chapter is dedicated to the general discussion and major conclusions of this research, pinpointing its limitations, strengths and implications for clinical practice, education and research.

During the presentation and development of the thesis some information appears repeatedly, which is justified by the fact that this information needed to be integrated as part of the different studies.

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## **CHAPTER II - Theoretical and scientific background**

2.1- Nursing and parenthood

2.2- Methodologies/approaches used to promote child health

2.3- Touchpoints methodology

2.3.1- Nurses' role on Touchpoints application and implementation

2.4- References

In this chapter, we approach the theoretical and scientific background of our research project, starting with a description of the nursing perspective on child health care. Following an overview of nursing theories and its link to the central topic of this research, we present the theory of transitions, the role supplementation program, the process of Parenting and child development, the Bio-ecological and Transactional Models and methodologies/approaches promoting child health focusing in the relation nurse/client and in the concept and practice of family-centered-care.

At last, we review the most relevant literature about Touchpoints methodology, including its conceptual and theoretical framework, which will be studied in the context of this research, particularly focusing on nurses' role in the implementation of this methodology and on the customer's (i.e., parents) and nurses' satisfaction.

## 2.1- Nursing and parenthood

As a profession that is concerned with providing care to the human being, throughout the life cycle and social groups in which is integrated, healthy or sick, in order to maintain, improve and recover their health by helping them to reach their maximum functional capacity as quickly as possible (Ordem dos Enfermeiros, 2015). Nursing cannot remain indifferent to situations that affect society in general, such as school absenteeism, addiction to psychoactive substances, suicide, delinquency, child abuse, neglect, among others. These situations happen mostly, due to emotional and behavioral disorders embedded in the family and in the different contexts in which individuals live. It is essential that nurses recognize the importance of their role in the prevention, identification and resolution these situations. The closeness of the relationship between the nurse, parents and the child in the first months of life, as well as their interconnection capacity with different health professionals, places the nurse in a privileged position within the healthcare team. This is why we consider it paramount to promote effective nursing interventions based in the principles of a therapeutic relationship.

Parenthood has the potential to promote children health and well-being and to prevent the physical and emotional development, which, if not positively performed, may cause significant problems in social and health care systems in subsequent generations. Society expects that parents care their children over a significant period of their lives and provide a conducive context of a favorable cognitive development. However, this task requires significant changes in people's lives that can often endanger family well-being and balance. Hence, it is important that professionals, particularly nurses who work with families and in the community, increase their scientific knowledge about parenting, mobilize it into their practice through effective intervention methodologies that can provide general benefits to children, families and society influencing them in a positive manner.

### Theory of transitions

Transitions arise from lifestyle changes, health, relationships and also from the environment. Consequently, they require the incorporation of knowledge, behavioral and self-concept changes aligned with the new social context and condition. Transitions are considered as a central concept in nursing because people who experience them tend to be more vulnerable to risks and, therefore, to see their health reached (Meleis, 2011). The development of the theory of transitions resulted from the contribution of different studies developed by Meleis and colleagues about transition experiences in different situations (Meleis, 2011). The following situations were considered as transitions: disease experiences (e.g., diagnosis, surgical procedures, rehabilitation and healing), transitions

throughout lifespan (e.g., pregnancy, birth, parenting, adolescence, menopause, old age and death), and situational transitions (e.g., emigration, retirement and family caregiver). The transitions were analyzed from the point of view of their nature (type, patterns and properties of transition experiments), constraints facilitators and inhibitors (personal, community and society), and response patterns (process indicators and outcome indicators). By knowing the properties and conditions inherent to the transition process, nurses will be able to provide therapeutic interventions tailored to the real needs of clients, families and communities.

The decision of becoming a father or a mother implies the assumption of an irreversible commitment, which distinguishes parenthood from the other transitions. Parenthood is considered to be one of the transitions that occur during the development of people lives, being named by Meleis (2011) and Mercer (2004) as a developmental transition.

This transition requires that the new parents develop different behavioral, emotional and cognitive responses, unknown until now. These responses imply a specific adaptation and reorganization, which may cause de-compensation and acquisition of vulnerabilities. In addition, parenthood is a continuous changing process; as the children evolve in their development path, parents will require continuous adaptation that involves the development and management of new feelings, behaviors and concerns.

#### Role supplementation

During the transition to parenthood, in addition to knowledge acquisition, parents need to be given the opportunity to express their concerns and feelings in order to explore potential ways of maximizing their new role. When individuals are not sufficiently prepared for the transition experience - the designated "role insufficiency" - adaptation is more difficult and well-being may be affected. Therefore, the therapeutic nursing interventions during the transition process can play a preventive and therapeutic role. This type of intervention has been designated as "supplementation role" and consists in providing information or experience required to support the new role. Furthermore, the involvement of significant others, also included in the "supplementation role", will help parents to increase their knowledge about behavior patterns, feelings, sensations and objectives associated with each role they need to perform. It is a preventive process that aims at developing the mastery on paper performance and can be used with different clients that are experiencing several transitions (Meleis, 2011). This intervention becomes effective through a preventive program of role supplementation. The communication is crucial in this process and can be performed by telephone, through nursing home visits or group meeting. Clients are encouraged to use an open and honest communication with nurses,

who, in return, should transmit them feedback and positive reinforcement. Strategies used in this type of approach include the use of reference groups, role modeling and training that serve as a way to develop, clarify and fulfill the (new) role. The purpose of this program is to get the mastery and integration of the role (Meleis, 2011; Meleis, Swendsen, & Jones, 2010b).

Several studies with this type of approach were conducted by nurses and revealed that they became significant role models for the participants, by providing support and establishing trustful and therapeutic relationships with customers (Meleis, 2011; Meleis, Swendsen, & Jones, 2010b).

#### Parenting and child development: changeable, dynamic and continuous process

As time passes, parental functions are modified and children overcome different stages of development. In fulfilling these functions, parents need to adapt their behavior in order to be capable to answer to children needs and to guarantee the construction of a firm structural basis. This will enables children to cope healthily the various challenges and adversities that may arise throughout their lives.

Several stages, corresponding to the age of the child, have been described as landmarks for the modification / adaptation of parental behavior. The first year of life is the period in which the parental role is based essentially on meeting the basic needs of children by providing their well-being and consequent global development (Hoffman & Bornstein, 1995b, cited by Cruz, 2005). The interaction established during this period will enable the sharing and exchange of feelings and affections between the caregiver and the child. Hence, according to Erikson (1976), it is a very important phase for the development of "basic confidence". Also Mary Ainsworth et al. (1978) focused on the quality of the relationship established between the child and the maternal figure, introducing the idea of a "secure base". The notion of security leads to the concept of "secure base", which corresponds to the notion of trust and protection that maternal figure conveys, serving as a "safe haven" that the child can use when he/she perceives situations of alarm and danger. This theory has reinforced the importance of the attachment quality, which means that primary caregivers are available and responsive to an infant's needs allowing the child to develop a sense of security. The infant knows that the caregiver is reliable; creating a "secure base" for the child to then explore the world. According to Bowlby (1969/1982), an individual who has experienced a secure attachment is likely to possess a representational model of attachment figures(s) as being available, responsive, and helpful.

Between the first and second years of life, due to the development of motor characteristic capabilities, the child needs greater vigilance from the adult. This happens because, despite walking towards autonomy and personal statement, the child is still unable to recognize the consequences of his/her behavior. This period is, according to Cruz (2005), marked by change in the interaction parent / child; parents' behavior will focus essentially on safety through a more restrictive attitude, disciplinary and less warm. The author complements that the change in parental behavior is now much more directed to the role of socialization meeting the evolution of child development. A greater ability of parents to understand and act leads the child to a growing abuse of basic rules, endangering his/her security. Consequently a change in parents' behavior can ensure the child's safety, the protection of materials assets and family routines.

At 2-3 years of child's age, parental behavior is identical to the previous period. Almost half of the time, mother / child interaction is characterized by parents' attempts to change the child's behavior (Cruz, 2005).

Between 2 and 6 years of age, the child appears to have less control attempts by parents. This is justified, on the one hand, by the change in attitude and child's behavior (now with greater motivation to obey and ease in self-control) and, on the other hand, because parents are more able to respect the autonomy of the child.

#### Bio-ecological model

The Bio-ecological model (Bronfenbrenner et al., 1998; Bronfenbrenner, 2005) was an important milestone in the understanding of the mutual interactive process and its influence on human development. This model takes into account four main components: process, person, context and time (PPCT) and the dynamic, integrative relationship among them. According to this model, infant development occurs through processes of interaction between the child and the persons, objects, and symbols in its immediate and more remote environment in which the child interact during an extended period of time (e.g., gestational age, siblings, feeding, SES, maternal behavior, nursing visits attended by the family at Primary Health Care Center). Therefore, distal and proximal factors will affect infant development reason why this model represents a change in how the importance of family and community in child development is perceived.

#### Transactional Model

According to the Transactional Model (Sameroff & Fiese, 1990), mother and child affect one another and changing behavior is done through steps (transactions). In each transaction, maternal contribution affects the child's behavior and vice-versa; at the end, both are changed as individuals and as a dyad. In this regard, and in order to illustrate

how the transactional model can take effect, we present the situation of prematurity. It has been widely recognized that premature birth can have a significant influence on the child development, mainly in terms of regularity of sleep patterns and consistency of social interactions. Therefore, it can consequently affect the routine of parents in the process of providing care to the child in an adverse manner. An illustrative example that supports the Transaction Model is presented by their authors when they refer to an educational intervention program conducted with 74 parents of premature infants developed by Nurcombe et al. (1984, cited by Sameroff & Fiese, 1990). The intervention program consisted in 11 education sessions carried out by an experienced pediatric nurse and was designed to teach and train the parents of these children on issues related to the development of premature babies (e.g., regulatory system, motor development, identifying strategies and temper patterns). Three months after the intervention and six months after hospital discharge both groups (intervention and control) were evaluated in different parameters: the child's temperament, the satisfaction of the maternal role, the mother's attitude towards child care and maternal confidence. Results indicated that mothers who participated in the program were more confident, more satisfied and that their child care was more suitable compared to the one of the mothers in the control group. Mothers who were subjected to intervention considered their children more adaptable, happier, and more approachable and were not easily distressed. Despite these results, it is important to note that the two interactive partners are also subject to the influence of other variables, namely, personal, social, cultural, economic and spiritual.

According to the Transactional Model, the family is the key to a child's development. Thus, when families and cultural variables promote the development, children with perinatal problems are not distinguished from children without such problems. Furthermore, when families and cultural variables do not promote the development, children without complications of biological disorders develop serious problems social and cognitive level in the future. Bearing this in mind, it is worthwhile to notice that "(...) the family is the essential component of the environment in which the child develops, which influences and is influenced by the child in a continuous and dynamic process, resulting in different aspects of the family and the child in every moment of interaction established between these "(Simeonsson & Bailey, 1990 cited by Correia & Serrano, 2000: 18). Also Sameroff and Fiese (1990) considered that the interventions focused only on the child are not enough to succeed. In order to be more effective and contribute to a better development and future of the child, it is important and necessary that interventions involve the family and the community.

## **2.2- Methodologies/approaches used to promote child health**

### The relation nurse-client

The interpersonal relationship between a nurse and a person/family/community is a central concept in nursing professional practice. This relationship is designed to help the client to be proactive in achieving his/her health project and is grounded on the principles of the therapeutic relationship, developed and strengthened over a dynamic process in which the nurse and the client/family/community take part as partners (Ordem dos Enfermeiros, 2001).

The interpersonal relationship is particularly important when the provision of nursing care occurs during the transition to parenthood. As this is a transition, vulnerabilities are inherently associated with it. In this process, the client needs to be understood as a human being, unique, indivisible in his/her physical, psychological, social, emotional and spiritual dimensions, whose behavior reflects and is based on the beliefs and values of the social context in which he/she operates. Based on this assumption, nurses will be able to more easily understand, respect and accept the individual building a close and trusting relationship that can help to identify needs and develop a collaborating care plan.

The nursing therapeutic interventions are always guided by a relational process. Lopes (2005) who developed a mid-range theory on the nurse-client relationship concluded that the “nature of the interaction” represents a significant relation component. In addition to the “diagnostic evaluation process”, the relationship between the client/nurse is also constituted by the “process of nursing therapeutic intervention”. This process is understood as an intentional process towards the client/family. The relation with the health organization, with other clients and health professionals play a relevant role in this process. Moreover, for its implementation, the nurse can use different therapeutic interventions, namely “feelings management” (by creating a physical and emotional space that can facilitate the expression of feelings and the promotion of trust/security); the “information management” (associated to the management of feelings and information that will facilitate the transition experiences). The relational process is implicit throughout the nursing intervention and emphasizes the availability, continuity, proximity and trust that are associated to a continuous process of health education facilitation the experience of transition.

The relationship established with the client is a means by which the quality of care can be achieved. In the area of parenting, the trust and close relationship begins during the

period of pregnancy, when nurses identify family needs and, in a “joint walk”, use the existing resources and strategies to satisfy and meet identified needs.

In the postpartum period, parenting process continues and, due to its irreversibility, goes along parents’ lives. This underlies the continuity of nursing care throughout this process.

The nursing intervention with parents/family is strengthened and based on the relational process and partnership. Education, training and care supervision are developed to generate and strengthen parenting skills, making parents feel confident, safe and autonomous.

The therapeutic relationship is therefore integrated in the nursing intervention during the follow-up of the family, throughout the transition process and experience of parenting (Soares, 2008). Thus, the therapeutic relationship is considered as transversal to the entire nursing intervention helping parents to become effective. Through this, the nurse is able to build a strong and close relationship with parents/family characterized by availability, knowledge, accessibility and trust.

The proximity, continuity and empathy that contextualize the relationship established with parents/family over the child health surveillance are developed through a communication process. This, however, is not always valued by nurses and may affect the quality of the relationship (Soares, 2008). In fact, communication is a central phenomenon in society. Persons interact through communication, making them able to build an inter-personal relationship. Thus, the development of communication skills contributes to the quality of the relationship. Nurses need to apply their knowledge and communication skills to be able to understand the individual as a whole in the different dimensions more easily, identifying needs and finding the most appropriate way to achieve the maximum potential for well-being together.

### Family-Centered Care

The philosophy of family-centered care (FCC) is a partnership approach to health care decision-making between the family and health care providers (Kuo et al., 2012).

Considered essential in providing care to children and families, FCC promotes parental involvement by creating a true partnership of care (Jolley & Shields, 2009).

Many authors and national and international nursing organizations (e.g., American Nurses Association and Society of Pediatric Nurses, 2003; European; Association for the Care of Children in Hospital, 2010, cited by Coyne, O’Neill, Murphy, Costello, & O’Shea, 2011; Ordem dos Enfermeiros, 2011) recognize FCC as being essential to provide quality care for children and family, since it promotes the involvement of parents in the care and reduces the adverse effects of hospitalization. Although the concept of FCC has

progressed over time, it is still based on the principle that care practices should focus on the child and family needs, being guided by the following values: (i) a child is a vulnerable human being, (ii) parents/significant persons are the main care providers, (iii) security preservation of child and family well-being are paramount in the maximization of the potential of child growth and development (Ordem dos Enfermeiros, 2010). Also Kuo et al., (2012) present a set of principles underlying the family-centered care approach, which are presented as follows (Table 1).

Table 1- Principles of family-centered care approach

<b>Principle</b>	<b>Description</b>
- <i>Information sharing</i>	The exchange of information is open, unbiased and objective.
- <i>Respect and honoring differences</i>	The respect for variety, cultural and linguistic traditions, and care preferences are present in relationship
- <i>Partnership and collaboration</i>	The therapeutic decisions are that best fit to the needs and are taken according to strengths, values, skills of both parts involved, including families at the level they choose
- <i>Negotiation</i>	The desired outcomes of therapeutic care plans are flexible and unnecessarily finished
- <i>Care in context of family and community</i>	The health care provision and decision-making reflect the different contexts where the child is inserted and live (e.g. family, school, daily activities, community).

Adapted from Kuo et al., (2012).

The partnership of care is built through negotiation and promotes parents' empowerment to the care process and decision-making. Therefore, it endorses the therapeutic relationship based on mutual trust and respect (Jolley & Shields, 2009).

Studies examining FCC efficacy show that this approach increases the efficient use of resources, promotes physical and mental health and well-being and contributes to cost containment (Kuhlthau et al., 2011; Kuo, Bird, & Tilford, 2011). Additional reviews suggest benefits related to increasing health literacy and self-management (Coulter & Ellins, 2007), patient involvement resulting in relevant information gain (Nilsen, Myrhaug, Johansen, Oliver, & Oxman, 2006), leading empowerment and improve self-management

(Wagner et al., 2005) and improving child health and behavior (Kline, 2005). Finally, the results of a research project developed by Olds et al. (2015), using a nurse-family partnership model, suggested that this work is challenging but feasible, having a considerable potential for improving the lives of vulnerable children and families. Thus, combining the TP methodology with a family-centered approach and care, this model was recognized as contributing to the effectiveness and quality of child and family care (Stadtler et al., 2013).

### **2.3- Touchpoints methodology**

Touchpoints methodology was developed after the 70<sup>ies</sup> by Berry Brazelton. Although primarily thought to be applied in primary preventive healthcare settings, TP is a systematic approach with interdisciplinary applicability (e.g. healthcare, social services, early intervention, early care and education). This methodology identifies predictable critical periods (named Touchpoints) and events in child development (causing disorganization on infant self-regulation, behavior, attention and other infant systems) that precede a spurt in a particular line of development and can disrupt family relations causing parental frustration and self-doubt. According to the pioneers of this approach, these moments – “touchpoints” – can also provide an opportunity for practitioners to connect with parents, establishing an alliance and a supportive partnership. The interactions focus on parental strengths and anticipatory guidance, hence contributing to their empowerment.

TP approach results from the interaction of development and relational models. Child development is seen as a discontinuous process with spurts and regressions associated to the parents’ meanings about developmental events in the context of caregiving. According to this point of view, development is a parallel process with the child and parents developing sidelong. According to Brazelton (1992), child development is associated to three main sources of energy: maturation of the central nervous system, child’s internal feedback system (own awareness of success at each step) and external feedback system (nurturance and support of a caregiving adult).

TP methodology is a holistic approach to care and includes effective strategies for engaging families in the care of their children. Through TP approach, practitioners observe and understand the inner lives of parents, addressing parents’ concerns.

TP model is organized around a development sequence of themes and expected changes in the child and family’s life. Brazelton and Sparrow (2005-2006) reference 14 TP, starting before birth (pregnancy) and extending to the first 5 years of the child’s life, corresponding to each TP specific themes according to the evolution of child development (Table 2).

These themes include caregiving responsibilities (e.g. feeding, sleeping, discipline, toileting, and keeping the child safe), the development of language, thinking, and movement skills and the regulation of emotions through daily interactions.

Table 2- Touchpoints themes.

Age	Themes
<b>Pregnancy</b>	The Ideal Baby
<b>Newborn</b>	The Real Baby
<b>3 Weeks</b>	The Energy Sink
<b>6-8 Weeks</b>	The Rewarding Baby
<b>4 Months</b>	Looking Outward
<b>7 Months</b>	Up at Night
<b>9 Months</b>	The Pointer
<b>12 Months</b>	The Walker
<b>15 Months</b>	The Clinger
<b>18 Months</b>	Rebel with a Cause
<b>2 Years</b>	Getting to “no!”
<b>3 Years</b>	Why?
<b>4 Years</b>	I matter
<b>5 Years</b>	Who am I?

Adapted from Brazelton & Sparrow (2006)

This relational model values the relation between practitioners and parents and the ability to “read” the feelings of others, being empathetic during this interaction. It is characterized by the understanding the way the alliance family/practitioner is built and maintained, parents’ positive and negative passion, parent-child relationship and uses the baby language as means to establish the connection with parents.

The Touchpoints principles and parental assumptions (Table 3) offer reflective opportunities to effectively join parents in the system of care around child. These are maxims translated to practice that help practitioners on key elements of TP approach. They represent a flexible framework for using the developmental knowledge and relational competences that incite practitioner to self-reflection, organize his thinking when he is working with child/family, helping him to make judgments that support good parenting. Practitioner-parent relationship assumes a role of “scaffolding”, informational and personal

support to achieve growth, so that parents can be successful managing the challenges of parenting and childrearing. By gathering information and establishing mutuality, practitioners are able to participate in the child care, joining parents, and, gradually, the relationship with each family is deepened and a real partnership occurs. Sharing genuine concern for the child and establishing an authentic relationship means that practitioners bring themselves (including their thoughts and feelings) to the interaction. On the one hand, it can interfere on supporting process; on the other hand, it is an excellent opportunity to reflect and better understand the families and themselves as human beings and healthcare professionals.

Table 3 – *Touchpoints* principles and parental assumptions

<b>PRINCIPLES</b>	<b>PARENTAL ASSUMPTIONS</b>
- <i>Recognize what you bring to the interaction</i>	- <i>The parent is the expert on his or her child</i>
- <i>Look for opportunities to support mastery</i>	- <i>All parents have strengths</i>
- <i>Use the behavior of the child as your language</i>	- <i>All parents want to do well by their child</i>
- <i>Value disorganization and vulnerability as an opportunity</i>	- <i>All parents have something critical to share at each developmental stage</i>
- <i>Value and understand the relationship between you and the parent</i>	- <i>All parents have ambivalent feelings</i>
- <i>Be willing to discuss matters that go beyond your traditional role</i>	- <i>Parenting is a process built on trial and error.</i>
- <i>Focus on the parent-child relationship</i>	
- <i>Value passion wherever you find it</i>	

Adapted from Brazelton & Sparrow (2006)

As advocated by Brazelton, “Our goal is that parents everywhere work with supportive providers, feel confident in their parenting role, and form strong, resilient attachments with their children. To help achieve this, providers must be responsive to parents, knowledgeable about child development, and eager to see every parent succeed” (Brazelton Touchpoints Center, 2015:1). Indeed, TP methodology represents a transformation on current practice paradigms, programs and service delivery, evolving(i) from a deficit model to a positive model, (ii) from linear development to multidimensional development, (iii) from prescriptive to collaborative, (iv) from objective involvement to

emphatic involvement, and (iv) from strict discipline boundaries to flexible discipline boundaries.

### **2.3.1- Nurses' role on Touchpoints application and implementation**

Touchpoints methodology was primarily thought to be used in Primary Care and Brazelton considered nursing to be the professional group whose philosophy and practice is closer to this methodology (Stadtler, Brandt, Novak, & Beauchesne, 2013).

The nurses' family-centered care (FCC) was considered an excellent theoretical approach to support, enhance and optimize the implementation of TP methodology. Brazelton believed that nurses can improve mental health, essential on primary care to increase child and families' care and, simultaneously, promote health care system improvements (Stadtler et al., 2013).

Besides bringing benefits for families, TP methodology may be an opportunity for healthcare professionals to act preventively, strengthening their relationship with parents through early guidance, parental education and knowledge sharing. The interpersonal relationship underlies all nursing care (Ordem dos Enfermeiros, 2003).

Nurses who apply this approach in their care and practice recognize that they more easily establish a connection and proximity to the families by promoting, through education, knowledge and parenting skills (Percy, Stadtler & Sands, 2002; Percy, 2006).

The results of some studies highlight that using TP methodology had a positive impact, both in parents' performance and satisfaction, and in the children's behavior (Gomes-Pedro et al., 1986, 1989; Gomes-Pedro et al, 1995; Percy & McIntyre, 2001; Stadtler, Tronick, & Brazelton, 2001; Tyler & Horner, 2008a; Tyler & Horner, 2008b and Farber, 2009).

#### **Client satisfaction**

Satisfaction is a concept underpinned in a multidimensional and subjective perspective influenced by different conditions (Santos, 2009; Cruz & Melleiro, 2010), reason why it has several definitions and forms of analysis. Donabedian (1988) defines customer satisfaction as an attitude and an emotion. In turn, Sargeant and Kaehler (1999) points out that it results from the availability of services, the conduct of health professionals, trust and the success of the outcome. More recently, Larsson and Larsson (2009) referred to it as a result of customer perception about the care they received in the light of their previous experiences, their way of life, individual and social values, and even their future expectations.

The evaluation of satisfaction also results from the overall interactive process developed between the client and the organizational structure (human and material resources) and, according to Tomás and Gonçalves (2010), the quality of interaction and the ability of management and facility to establish partnerships by the health units are a means through which health gains can be produced.

Nursing is one of the largest professional groups in the health sector, having a crucial role in client satisfaction with healthcare (Elder et al., 2004; Laschinger, Hall, Pederson, & Almost, 2005). Nurses are on the front line of care and they occupy a privileged position within the healthcare team. The fact that these professional stay longer in health services allows a first contact with the concerns and needs of clients/families, giving nurses the opportunity to develop a closer contact with the client. Furthermore, this allows the establishment of connections with other professionals and services providing the necessary information, support and mobilization of resources capable of responding to customer needs.

#### **Attributes associated to client satisfaction with nursing care**

##### **- Emotional support**

Emotional support is an ability to calm the fears, being supported by nursing interventions (Cox, 1982). The perception, by the customer, that the care received takes their individuality and uniqueness into account, and meet their needs through a friendly, courteous, respectful, caring, supportive, concerned, empathetic, respect for customer privacy and concern for his family and friends, the prompt response and referral to the necessary resources, proximity, availability for listen to the customer and listening skills (Ahmad & Alasad, 2004; Donabedian, 1992; Dozier et al., 2001; Elder et al., 2004; Eriksson & Svedlund, 2007; González-Valentín et al., 2005; Johansson et al., 2002; Kee et al. 2005; Kuosmanen et al., 2006; Larrabee et al., 2004; Liu, Avant, Aunguroch, Zhang, & Jiang, 2014; Liu & Wang, 2007; Martin et al., 1998; Merkouris et al., 2004; Mitchell-DiCenso et al, 1996; O'Connell et al., 1999; Schmidt, 2003; Sitzia & Wood, 1999; Suhonen et al., 2007; Tzeng & Katefian, 2002; Wagner, Bear, & Davidson, 2011; Wolf et al., 1998; Yellen, 2003; Zimlichman et al., 2003). The interpersonal relationship takes, in many cases, higher valuation than the technical competence (O'Connell et al., 1999; Yagil, Luria, Admi, Moshe-Eilon, & Linn, 2010).

##### **- Health information**

Customers need to be informed about their health status, treatments and its implications in clients' lives. Therefore, the more information and training nurses provide to customers, the more they feel satisfied (Aiello et al., 2003; Ahmad, & Alasad, 2004; Bear & Bowers,

1998; Cox, 1982; Eriksson, & Svedlund, 2007; O'Connell et al., 1999; Raper, 1996; Schmidt, 2003; Sitzia, & Wood, 1999; Thi et al., 2002; Tzeng, & Katefian, 2002; Yellen, 2003).

- Decision-control

Customers expect to participate and be involved in the decision-making about health care provision and show higher levels of satisfaction when nurses provide information about the treatments and involve them in the decision of choosing it (Ahmad, & Alasad, 2004).

- Technical and vocational skills

Despite the quality of the technical aspects of nursing care, nurses sometimes confuse customers/patients with their attitudes and professional presentation (Lynn et al. 2007). Nurses are recognized by clinical knowledge and skills related to therapeutic interventions, exams and procedures (Liu & Wang, 2007; Martin et al., 1998; Sitzia & Wood, 1999; Merkouris et al., 2004; Mrayyan, 2006).

### **Nurse satisfaction**

The importance of evaluating job satisfaction, beyond being safeguarded in the Health Basic Law in Portugal (Portugal, 1990), was also included in the National Health Plan 2012-2016 (Portugal, 2012) and valued in order to improve performance indicators and decision support.

Despite the different approaches and theoretical perspectives that job satisfaction has been the subject over time, it is essential to know the constraints that may affect satisfaction and the strategies that can be used for its assurance and promotion.

There are several factors that affect the degree of job satisfaction, namely, demographic variables (e.g., age, gender, education, work experience), job characteristics (e.g., status, autonomy, repeatability, jobs, salary, etc.), environmental and organizational factors (e.g., type of care unit, level of professionalism, supervision, interpersonal relations) (Kettle, 2002).

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## **CHAPTER III – Methodology**

### 3.1- Methodological paradigm

#### 3.1.1- Aims

#### 3.1.2– Research methods

##### 3.1.2.1- Instruments for data collection

##### 3.1.2.2- Eligible participants

##### 3.1.2.3- Method of collection, analysis and statistical data analysis

###### 3.1.2.3.1- Procedures adopted for data collection

###### 3.1.2.3.2- Statistical analysis

### 3.2– Ethical considerations

### 3.3- References

In this chapter, detailed information is presented about the methodological decisions made in our research project. Following the description of the methodology paradigm, we present a concise explanation of the aims, research methods, and general information on the subjects, instruments and procedures and data analyses, reasons for selection of each study methodology and ethical considerations. The next chapters will describe specific information about each study.

### **3.1- Methodological paradigm**

The evolution of nursing as a discipline of knowledge requires constant reflection on nursing practices, the incorporation of research findings into practice, and the interactions with customers. In this sense, an updated knowledge, based on the scientific evidence and continuous research in order to find solutions and answers adjusted to the needs of the human being, is essential.

The acquisition of nursing knowledge, although possible to be achieved by diverse research paradigms and methods, increasingly regards a combination of both quantitative and qualitative approaches and methodologies. This combination allows a wider vision of reality and understanding of the complexity of human experience (Coutinho, 2011). Therefore, and due to the complexity and richness of the topic under study, we chose to combine methodologies in order to reach a better knowledge.

First, we opted to conduct a longitudinal, quasi-experimental study since it was intended to evaluate the effectiveness of Touchpoints methodology when implemented by nurses, in the context of primary health care, with a group of mothers of children with 11 months for a period of approximately 13 months. We emphasize the need to develop intervention, quasi-experimental and experimental studies in nursing given its scarcity. From a methodological point of view, this can be considered one of the innovative aspects of this doctoral dissertation.

Second, as part of this project, we studied the psychometric properties, adaptation and validation of a scale, the Quality Perception Relationship between Parents and Caregivers Scale. This not only permitted the development of a new instrument that can be used in nursing practice, but complemented the study of the impact of Touchpoints intervention on parental perception of the quality and promotion of the relationship with nurses who performs the child's health surveillance.

Third, and at last, in order to obtain an in-depth understanding of the experience and meaning given by parents and nurses to their participation in the implementation of Touchpoints methodology by nurses, we developed a qualitative study using a phenomenological approach.

Further details on each specific study integrated in this project will be provided in each correspondent chapter.

Therefore, this study embraces predominantly a quantitative paradigm (Figure 1), in which some qualitative measures are included to provide a better comprehension yield to the quantitative investigation. According to Cohen (2007), by doing so, this study assumes a

hybrids mixed-methods paradigm (Figure 1), in which a quantitative or qualitative study is embedded by another methodology, without losing their main quantitative or qualitative characteristics. By doing so, more information is added to particular understanding a specific phenomenon.

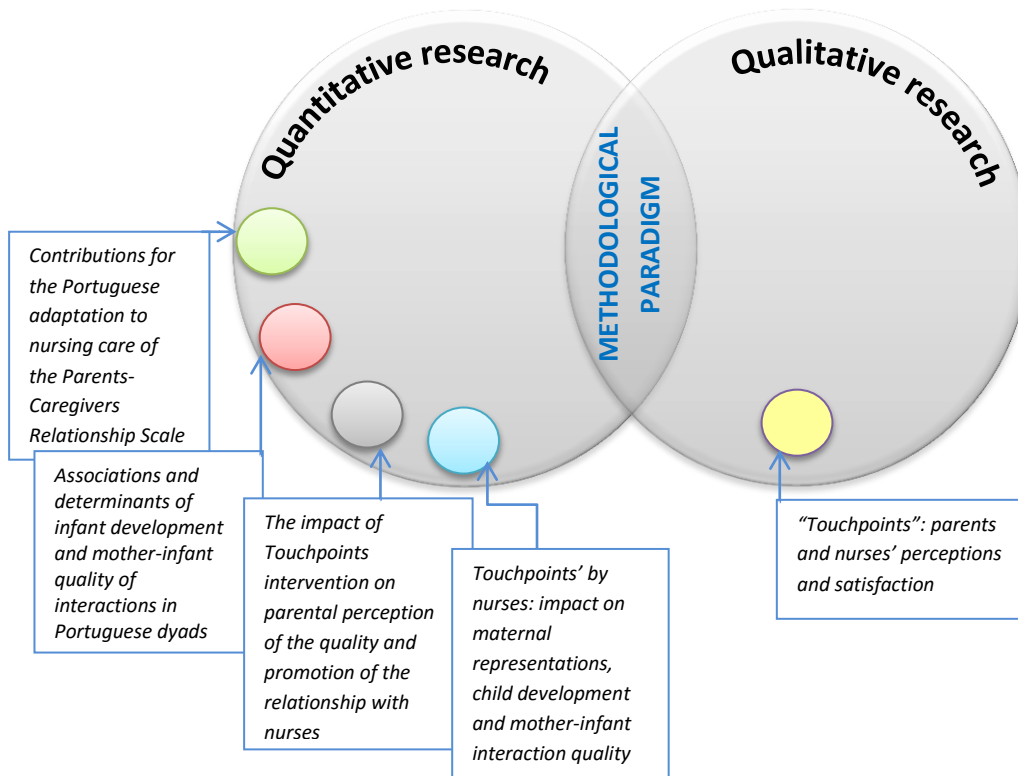


Figure 1 – Study methodological design

### 3.1.1– Aims

The main purpose of this research project is to assess the impact of clinical nursing intervention through the Touchpoints approach in the mother-child interactive behavior and child development between the first and the second year of life, framing this methodology as a technique likely to be included in nursing practice.

Based on this main objective, the following research question was raised: (1) What is the impact of clinical nursing intervention through the Touchpoints approach in the mother-child interactive behavior and child development between the first and the second year of the child's life?

Associated to this main purpose and research question we defined specific objectives that we aim to respond through a set of four studies. Table 4 presents the objectives of these studies.

Table 4 – Objectives

<b>OBJECTIVES</b>
(i) to investigate how mothers interact with their children and the influence such relations have in children development;
(ii) to investigate whether the Touchpoints intervention affects the quality of mother-child interaction;
(iii) to investigate if rates of child development improves in the group with Touchpoints intervention;
(iv) to investigate if maternal positive representations about their child and about their role improves in the group with Touchpoints intervention;
(v) to analyze if family satisfaction with health services increases in the group with Touchpoints intervention;
(vi) to understand the impact of clinical nursing intervention through the Touchpoints approach in the mother-child interactive behavior from the parents' perspective.

### **3.1.2– Research methods**

#### ***3.1.2.1- Instruments for data collection***

Although the measures used in this research project are described, in detail, in the different studies presented in Chapters IV, V, VI, VII and VIII, a brief explanation of each one of these instruments is provided as follows.

##### **(i) Medical and Familial Demographic Information**

At the 11 months nursing visit attended by the parents at the family at Primary Health Care Center, mothers were interviewed about their infant's medical status and familial demographics. In Portugal, all parents have their children's medical record since birth – the so-called “the Baby health book” (Children and Youth Health Bulletin, 2013). We requested permission to collect data from this book. Medical and demographic factors

included the infant's delivery method, APGAR score at 1 and 5-minute, gestational age at delivery, birth growth measurements (weight, length, head circumference), gender, parity, health status at delivery, prenatal health care (number/frequency of medical consultations), pregnancy health status (normal or at risk), and infant health conditions (identification, frequency and severity). Mothers reported the family attendance of medical and nursing visits at Primary Health Care Center (during pregnancy and after the infant's delivery) and the frequency of these visits, the family socioeconomic status, parents' years of completed education, age, employment status, marital status, the infant's diet history (including the introduction of cow's milk in the infant's diet), the number of siblings and infant health status during the first year of life.

Since our aims did not include studying father-infant interactions, we collected little demographic information of fathers. Hence, we collected mainly fathers' years of education, age, employment status, marital status and health status (Appendix I).

### **(ii) Schedule of Growing Skills II**

In this study infant development was assessed with the Schedule of Growing Skills II (SGS II); this was performed at 11 and 24 months. The SGS II (Bellman et al., 1996) is a developmental screening tool used to assess the developmental trajectories of children from birth to five years of age and is based on the Sheridan developmental sequences, published in 1975 (Sheridan, 1997) and Griffiths Mental Developmental Scales published in 1967 and revised in 1984 (Bellman et al., 1996). It comprises ten different skill areas: Passive Posture, Active Posture, Locomotor, Manipulative, Visual, Hearing and Language, Speech and Language, Interactive Social, Self-care Social and Cognition. The SGS II allows us to obtain the developmental age and the coefficient of development, both in general and in each distinct dimension of development.

Two independent trained coders, reliable and blind against the study hypotheses scored the SGS II. The degree of reliability and validity of the SGS II has been tested with excellent scores (Cronbach, between .88 and .97, Bellman et al., 1996). These scores were obtained without using the subscale of Passive Posture, as it is only applied for babies under 6 months of age, which is not the case in our study (Appendix II).

### **(iii) Family Needs Survey**

Family Needs Survey (Bailey et al., 1988) is an instrument that gives families the opportunity to identify their daily needs in seven content areas like: Information, Family & Social Support, Explaining to Others, Community Services; Child Care; Financial and Professional Support. The original instrument consists of 35 items (and space for additional topics) which family members can rate on a three-point scale of "do not need",

“not sure”, and “definitely need help with this”. Test-retest correlations over a six-month period for total scores were reported to be .67 for a sample of mothers and .81 for fathers (Bailey et al., 1988). In our study, we use the version that was adapted and validated with Portuguese families (revised in 1990 by Serrano, Serrano & Correia, 1996) (Appendix III).

#### **(iv) Family Socioeconomic Status (SES)**

The Graffar Social Classification (Graffar, 1956, validated in Portuguese samples by Amaro in 1990 and revised in 2010) assesses the families’ socioeconomic status (SES) and takes the following variables into account: income, level of education, profession, and type of home using five socio-economic layers (Appendix IV).

#### **(v) Family Support Scale**

The Family Support Scale (FSS; Dunst et al., 1984, validated in Portuguese samples by Coutinho in 1999) allows identifying and quantifying families’ sources as they rear their young children, providing information about Helpfulness of support networks. This instrument comprises 19 items divided in five subscales: Informal kinship, Spouse/partner support, Social organizations, Formal kinship and Professional services. Respondents are asked to indicate how helpful various individuals, groups, and agencies have been, indicating the amount of help received from each. The score is indicated on a Likert scale of 5 points from 1 (Not at all helpful) to 5 (Extremely helpful). The degree of reliability and validity of the scale was confirmed in the study developed by Dunst et al., (1984) with an internal consistency of .77 and a confidence level of .75 (coefficient of the bipartition) (Appendix V).

#### **(vi) CARE-Index**

At the 12 and 24 months’ Health Centre visits, mothers were videotaped during social interaction with their infants according to the instructions available in the CARE-Index manual (Crittenden, 2003) that is each dyad played about five minutes (3 minutes minimum). Mothers were asked to play with the infant as they typically would do at home. A standard set of age-appropriate toys was provided for the dyad, arranged on a blanket on the floor of the play room (according to Fuertes, Lopes-dos-Santos, Beeghly, & Tronick, 2009; 2011).

Scoring of maternal and infant behavior from the videotaped free play sessions was accomplished using the CARE-Index (Crittenden, 2003). The CARE-Index assesses three dimensions of parents’ interactive behavior with their infant (Sensitive, Controlling/Intrusive, and Unresponsive), and four dimensions of the infant’s interactive behavior with parents (Cooperative, Compulsive-Compliant, Difficult and Passive). As Crittenden (2003) suggested, parental and infant behaviors were scored by two

independent researchers. An example of this scoring system can be given as follows: "For instance, if the mother smiles while the infant is distressed, the mother's behavior is considered insensitive, whereas, if the mother smiles in response to the infant's smile or attentive face, the mother's behavior is considered sensitive." (Fuentes, Lopes-dos-Santos, Beeghly, & Tronick, 2009:323-324). After scoring, researchers can use independent scores of maternal sensitivity and infant cooperative behavior or compute the mean of both scores as a dyadic score. Generally, maternal sensitivity and infant cooperative behavior are presented as independent scores (Fuentes et al., 2009; Muller-Nix et al., 2004). As in our study we want to understand independently maternal and infant contributes (even on a dyadic perspective), independent scores will be rated and presented (Appendix VI).

#### **(vii) Temperament Scale (in Portuguese: Escala do temperamento do bebê)**

The Temperament Scale (Lopes-dos-Santos, Fuentes & Sanches-Ferreira, 2005) is used to measure the child's temperament difficulty according to parental perceptions. The scale consists of nine items that focus on aspects related to the regularity of bio-physiological cycles and competence at the organizational level of the states. Each item makes a statement about certain characteristic of the child, leaving the respondent to assess the degree of prevalence of this characteristic in the child using a Likert type 7-point scale (1 is the situation of "almost never" and 7 the one of "almost always") (Appendix VII).

#### **(viii) The Parent-Caregiver Relationship Scale (PCRS)**

The PCRS- parents' version is a measure of evaluation of the perceived quality of the relationship between parents and child professional caregivers (Elicker, Noppe, & Noppe, Fortner-Woos, 1997, adapted and validated to nursing care in Portuguese samples in 2015 (Soares et al., 2015, submitted). In its original version, the scale consists of three subscales: "Trust"; "Collaboration" and "Affiliation". These are assessed in a Likert scale with response options varying from 1 (strongly disagree) to 5 (strongly agree). For our study, we adapted this scale to assess the perception of the quality of parent-nurses relationship (Appendix VIII).

#### **(ix) Focus groups**

Focus groups (FC) aim to verify and expand on initial findings, seeking further clarification of points previously made by participants and allow gathering several perspectives on the same situation (Curtis & Redmond, 2007).

Focus groups are a data collection method. Data is collected through a semi-structured group interview process. Focus groups are moderated by a group leader and are generally used to collect data on a specific topic aiming at having fruitful discussions

among a group of people with specific characteristics (Silva, Veloso, & Keating, 2014). The design of focus group research varies based on the research question that is being studied and must be conducted following a standardized set of questions in order to understand the topic of interest. The number of participants per group can vary. However, according to Krueger and Casey (2009), the rule of thumb has been 6-10 homogeneous strangers. Although, focus groups may have smaller or slightly larger groups, this is the most common number. The level of moderator involvement can also vary from high to low degrees of control (Morgan, 2010).

When parents were invited to participate in the FG session, they were requested to carry an object that they could associate to his/her child. Thus, one of the strategies to start the discussion was to ask the parents to introduce the object and the reasons for its choice. The purposes of this approach were “to warm-up” and, simultaneously, apply Touchpoints methodology putting, into practice, some of its principles, namely: “Value passion wherever you find it” and “Use the behavior of the child as your language”. The FG sessions were conducted following a set of questions presented on Table 5.

Table 5 – Guide of Focus Group sessions

QUESTIONS
<ul style="list-style-type: none"> <li>- <i>What has it meant to you to participate in the TP sessions?</i></li> <li>- <i>How did you feel by participating in the TP sessions?</i></li> <li>- <i>Did the TP sessions bring some contribution to your performance of the parental role?</i></li> <li>- <i>What did you think while you were with the nurse during the TP sessions?</i></li> <li>- <i>Do you remember some critical subject that has been discussed in the TP sessions? (If the answer is yes), can you specify? It has been helpful? (If the answer is yes), Why?</i></li> </ul>

Using this technique allowed the participants to share the experience and meanings attributed to the experience of participating in the implementation of the TP methodology.

#### **(x) Field-notes**

Field-Notes (FN) are widely used in the implementation of innovative approaches aimed at changing current practices. This type of instruments allows the regular monitoring and self-assessment of experiences, feelings, and self-awareness about the development of knowledge through the intervention (Coutinho, 2011). The FN were essentially reflective, showing the experience that the two nurses lived in each TP session with the participant

parents and children. FN were written by the two participant nurses during the implementation of TP methodology.

### 3.1.2.2- Eligible participants

Participants were 86 healthy Portuguese infants (46 girls; 40 boys, 48 first born), their mothers ( $M$  maternal age=30.63 years,  $SD$ =6.402, range: 18-48) and their fathers ( $M$  paternal age=34.09 years,  $SD$ =6.933, range: 19-51). Except for two infants (one born with 34 weeks of gestational age and another with 36), all were full-term.

All infants were healthy and clinically normal at delivery as determined by pediatric examination. Infants' birth weights ranged from 2060 to 4840 grams ( $M$ =3276.45,  $SD$ =508.267) and their weeks of gestational age at delivery ranged from 34 to 41 weeks ( $M$ =38.98 weeks,  $SD$ =1.389). APGAR scores at 5- minutes ranged from 8 to 10 ( $M$ =9.82,  $SD$ =.495). No infants had any known sensory or neuromotor disabilities, serious illnesses, or congenital anomalies (see Table 6).

Table 6 - Infants' Socio-demographic and clinical characteristics

<b>Participants Infants data N=86</b>	
<u>Infant gender</u>	
Male	40
Female	46
<u>Birth order</u>	
First born	48
Second born or more	38
<u>Gestational age (weeks)</u>	
<37 weeks	2
≥37 weeks	84
<u>Birth weight (grs.)</u>	
$M$	3276.45
$SD$	508.267
Range	2060-4840
<u>APGAR scores at 5-minute</u>	
$M$	9.82
$SD$	.495
Range	8-10

Mother- infant dyads were recruited at the Primary Health Care Center of Angra do Heroísmo, Azores, Portugal. The ethnicity of the participants was primarily Portuguese Caucasian, and most were from middle-class socio-economic backgrounds according to the Graffar Social Classification (12.9% were families with low-income, 34.9% were lower

middle-class, 31.4% were middle-class, 11.6% were upper middle-class and 9.3% were upper class).

All parents were literate but the level of completed education varied: 24 (27.9%) of the mothers and 29 (33.7%) of the fathers completed mandatory education (9 years), 18 (20.9%) of the mothers and 16 (18.6%) of the fathers completed high school (12 years) and 23 (26.8%) of the mothers and 14 (16.3%) of the fathers had obtained a college degree or higher education. The remaining 21 mothers (24.4%) and 24 fathers (27.9%) did not complete mandatory education. Unemployment affected only mothers (18 were unemployed) (see table 7).

Table 7 – Characterization of the sample of the Group with Intervention and Group without Intervention according to age, socioeconomic status, education and employment situation.

	<b>Group with Intervention</b> <b>N=43</b>		<b>Group without Intervention</b> <b>N=43</b>	
<b>Age</b>				
	<i>M</i>	30.56		30.60
	<i>DP</i>	6.39		6.44
	Range	18-48		21-42
<b>Socio economic status</b>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>
Low-income	6	14	5	11.6
Lower middle-class	17	39.5	13	30.2
Middle Class	14	32.6	13	30.2
Upper Middle Class	3	7	7	16.3
Upper Class	3	7	5	11.6
<b>Formal education</b>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>
Up to four years ( <i>first grade of basic school</i> )	2	4.7	4	9.3
5 to 6 years ( <i>second grade of basic school</i> )	9	20.9	6	14.0
7 to 9 years ( <i>third grade of basic school</i> )	11	25.6	13	30.2
10 to 12 years ( <i>secondary school level</i> )	12	27.9	6	14.0
More than 12 years ( <i>completed a College/University degree</i> )	8	18.6	14	32.6
Master	1	2.3	0	0
<b>Employment status</b>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>
Employed	29	67.4	39	90.7
Unemployed	14	32.6	4	9.3

According to medical records, no parents had any known mental health or drug/alcohol addiction problems. Most of these parents lived in the same island, i.e., Terceira Island, for all their lives and always used the same Primary Health Care Center. In those little cases of parents who came from another Azorean Island, their clinical records were transferred to the Primary Health Care Center where our study was conducted. Thus, we had full access to their clinical records.

All infants lived with both parents in the same household, with the exception of five children that lived solely with their mothers.

In this study, 17 infants (19.8%) were fed with cow's milk after 3 months, against medical advice. Feeding infants with cow's milk before 12 months can harm their health and neurological development (WHO, 2005). However, according to the reports from these families, this decision was taken when mothers could not breastfeed their infant (e.g., due to job commitments, because they had to return to their jobs) or could not afford to purchase formula. Thus, in our study, 11.6% of infants were not breastfeeding; 88.4% were breastfeeding on the first month of life; 30.2% were breastfeeding on the first 6 months or more. According to Dangal, (2007), a pregnancy is at risk when any maternal or fetal complications are present that could affect the health or safety of either the mother or baby and can be associated to risk factors such as: maternal age below 19 or above 35 years old; genetic problems in the father /mother family; maternal mental disease; existence of a child with genetic problems or malformations; maternal exposure to radiation, infections, drug or alcohol abuse; maternal diabetes or other chronic illness. In our study, 13 mothers (15.12%) had a pregnancy at risk associated to mother age and 6 mothers (6.98%) had a pregnancy at risk associated to maternal diabetes or other chronic illness.

The sample varied considering the specificities of each study conducted within the broader project. The total sample is compounded by a total of 126 families and 2 nurses. Figure 2 provides an overview of the study(ies) flowchart.

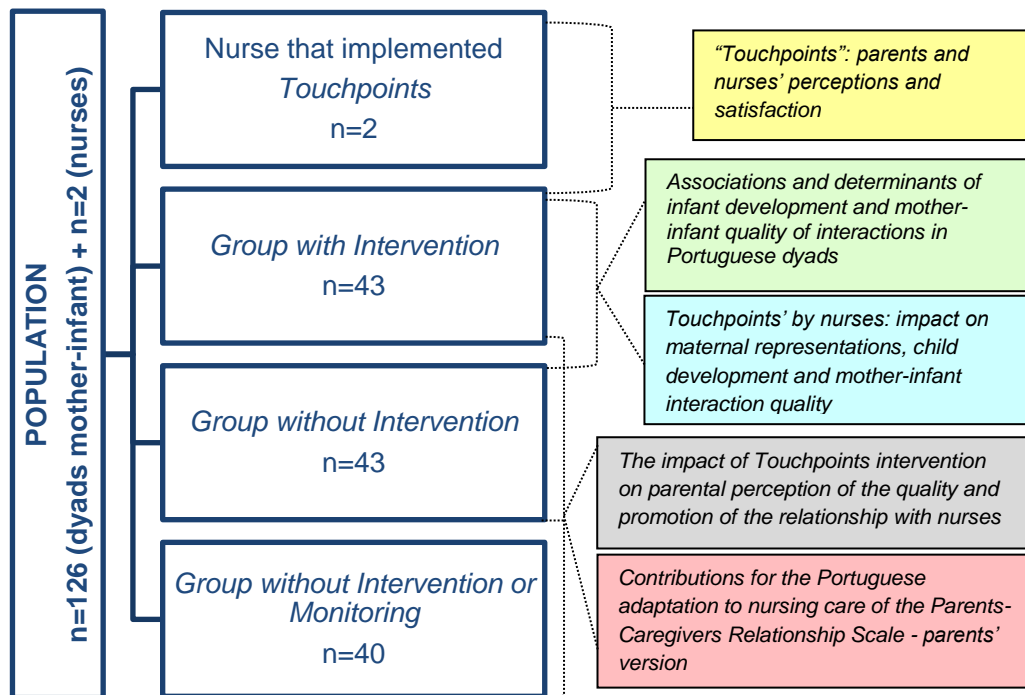


Figure 2 - Overview of the study(ies) sample flowchart.

In the sample of 86 mothers presented previously and corresponds to the sum of designated: *Group with Intervention* (n=43) and *Group without Intervention* (n=43), although there was a third group - *Group without Intervention or Monitoring* (n=40) - in order to describe the target population of the health center where the study took place on the implementation of the Touchpoints approach. Maternal age of this group had an average of 33 years ( $SD=6.7$ ), the children were children within the age group of 2 years, recruited randomly and systematically over four months.

The criteria for recruitment and inclusion were:

- the child belongs to the municipality of Angra do Heroísmo, Terceira island – Azores;
- the child performs health surveillance in nursing visit ( $\geq 4$  nursing visits);
- the child performs health surveillance in the healthcare center from her/his area of residence;
- the child's age is  $\leq 11$  months;
- the child's gestational age is  $\geq 32$  weeks;
- the child is clinically healthy;
- the child's family is not identified as belonging to a risk group or is at risk.

The exclusion criteria were:

- a) situations of paternal or maternal pathology;
- b) substance abuse;
- c) other conditions that could bias the results.

After determining the eligible participants, two equivalent groups were created as follows: the Group with Intervention and the Group without Intervention. These groups belong to paired samples according to the criteria of pairing (Table 8). Moreover, only one of these criteria of pairing would vary each time, the other should coincide. The average age of the mothers of these two groups corresponded to 31 years ( $SD=6.4$ ).

Table 8 - The criteria of pairing

THE CRITERIA OF PAIRING
- Maternal age $\leq$ 20 years old
- Maternal age between 21-34 years old
- Maternal age $\geq$ 35 years old
- Middle class <i>versus</i> poverty
- Mother One Parent <i>versus</i> live with both parents
- Healthy child without hospitalization <i>versus</i> hospitalization $\geq$ 5 days
- Physical illness or psychological parent <i>versus</i> never needed psychiatric consultation
- Twins
- Portuguese families or immigrants
- Pregnancy without risk <i>versus</i> risk
- Resuscitated baby or APGAR below 7 points in the first 5 minutes <i>versus</i> baby or not resuscitated APGAR above 7 points in the first 5 minutes

The criteria to select nurses to participate in the study and implementing Touchpoints methodology was to be trained in this methodology.

### **3.1.2.3- Method of collection, analysis and statistical data analysis**

#### *3.1.2.3.1- Procedures adopted for data collection*

After obtaining the consent from the Directorate of the Primary Health Care Center of Angra do Heroísmo (Terceira Island), over a 1 month period, a research assistant

contacted potential participants at and explained the study's purpose and procedures (Appendix IX). To determine eligibility, after signing an informed consent form, mothers were administered a brief interview to collect demographic information. With the parents' consent, information from the infant and parent's health status was extracted from their clinical record at the Primary Health Care Center and additional data was asked to parents about child routines (e.g., bathing, sleeping, feeding, elimination...); parents' perception about child development; home's conditions (e.g., hygiene; comfort, ventilation, luminosity...) (Appendix I). A total of 96 eligible families agreed to participate in this longitudinal quasi-experimental study. Of these, 10 infants lost their eligibility for different reasons, such as: death of child, death of mother, changed residence, significant delay in infant development, autism spectrum disorder symptoms or by dropping out of the study. This resulted in a sample of 86 mother-infant dyads (Figure 3).

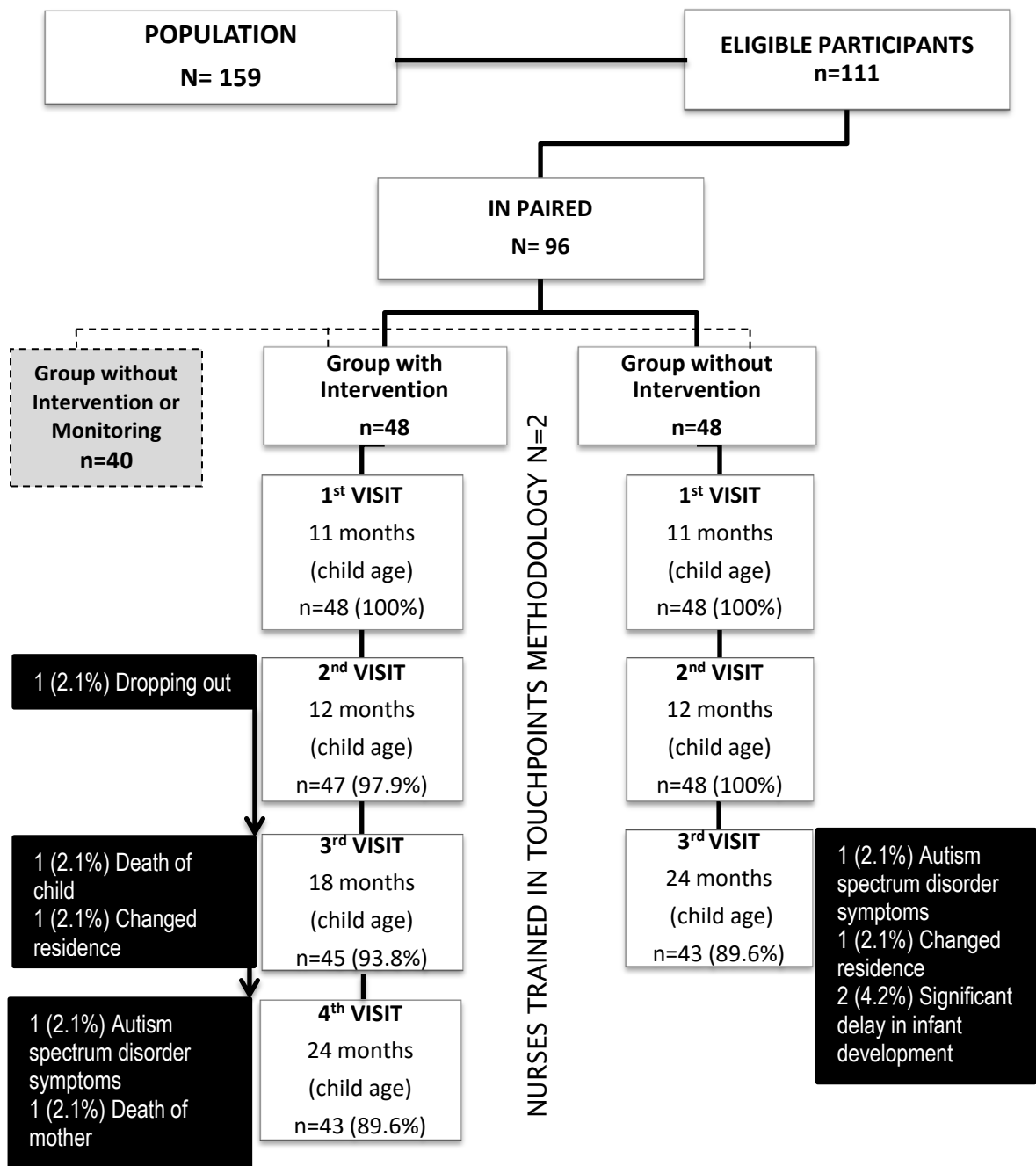


Figure 3 - Sample flowchart

Follow-Up Visit Procedures: The 86 dyads participated in 4 follow-up visits (see Table 9). The first visit took place around 11 months. In this visit, child development was assessed using the Schedule of Growing Skills II (Bellman, Lingam & Aukett, 1996). Following this assessment, mothers provided information about Medical and Familial Demographic data.

Additional information was collected using the Family Support Scale (Dunst, Jenkins, & Trivette, 1984), Family Needs Survey (Bailey, & Simeonsson, 1988), Temperament Scale (Lopes-dos-Santos, Furtos & Sanches-Ferreira, 2005) and Family Support Scale - Graffar Social Classification (Graffar, 1956).

Table 9 - Follow-up visits according to type of group, child age and measures used and Touchpoints methodology implementation.

GROUPS	GROUP WITH INTERVENTION				GROUP WITHOUT INTERVENTION		
	11 months	12 months	18 months	24 months	11 months	12 months	24 months
TOUCHPOINTS METHODOLOGY		X	X				
<u>MEASURES:</u>							
(i) - Medical and Familial Demographic Information	X				X		
(ii) - Schedule of Growing Skills II	X			X	X		X
(iii) - Family Needs Survey	X				X		
(iv) - Family Socioeconomic Status	X				X		
(v) - Family Support Scale	X				X		
(vi) - CARE-Index via videotape of free play sessions		X		X		X	X
(vii) - Temperament Scale	X			X	X		X
(viii) Parent-Caregiver Relationship Scale				X			X
(ix) - Focus groups				X			
(x) - Field-notes		X	X				

The second visit took place at around 12 months when the quality of mother-infant interaction was videotaped during independent free play situations. These videotaped free play protocols were later scored with CARE-Index (Crittenden, 2003). The first Touchpoints methodology session was applied in the Group with Intervention.

The Group with Intervention took place during the third visit, around 18 months. In that period, the second Touchpoints methodology session was applied.

At 24 months, the fourth visit took place, during which child development was assessed using the Schedule of Growing Skills II (Bellman, Lingam & Aukett, 1996) and the Temperament Scale (Lopes-dos-Santos, Fuertes & Sanches-Ferreira, 2005) was applied. The quality of mother-infant interaction was also assessed using CARE-Index (Crittenden, 2003) and parents' perception of parent-nurse relationship quality through the Parent Caregiver Relationship Scale (Elicker et al., 1997).

After these procedures, and following focus groups recommendations of including 6-10 homogeneous participants per session (Casey, 2009), some of the parents from the Group with Intervention participated in focus groups (FG) sessions.

Two FG were conducted with 10 parents (8 mothers and 2 fathers) of 8 children, each one with 5 parents. All these 10 parents were part of the Group with Intervention. FG had a total duration of 120 minutes (around 60 minutes each). The FG sessions were audio-recorded and transcribed verbatim. Theoretical saturation was reached after conducting 2 FG.

#### *3.1.4.3.2- Statistical analysis*

Data were entered twice into the computer by two different people and were cross-referenced in a specific software to detect input errors. Exploratory analyses of the data took place through the usual procedures for identifying outliers and normality of the distributions of the variables.

The information obtained through the questionnaires was codified for statistical analysis. Open-ended questions were coded *a posteriori* and due to great variation in the distribution of coded answers, these were recoded being added in categories with smaller dispersion.

Descriptive analysis was performed (frequency distribution, measures of central tendency, position, dispersion, asymmetry and flattening) as appropriate to the variables on the measurement scale.

For the measures of association, we used correlational analyses, using Pearson's correlation or Spearman according to variables distribution.

Interclass correlation coefficient (R) was used to assess test-retest reliability. Statistical analyses included descriptive statistics, t-test statistics and mixed between within subjects' analyses of variance (mixed-ANOVA). The t-test statistics were used to assess

differences between groups and the mixed-ANOVA was used to assess the effect of the intervention/control on participants' total scores on the outcome variables. When the analysis was the difference between two independent samples, the t-student test was used for independent samples or Mann-Whitney-U. Paired student t-tests when non parametric tests were required.

The Chi-square independence test method was used to test nominal variables, through the analysis of the differences through the analysis of adjusted standardized residues

In the study of psychometric properties, adaptation and validation of the Quality Perception Relationship between Parents and Caregivers Scale, we resorted to the exploratory factor analysis and the analysis method of the main components using the varimax orthogonal transformation. The internal consistency was assessed by Cronbach's alpha and fidelity of the items by Kendall correlations. In situations where differences were observed, we used the multiple comparison test of Tukey HSD and Bonferroni. In the situations in which we did not observe the conditions for using parametric tests, we used the Kruskal-Wallis test, subsequently proceeding to multiple comparisons of the means of command, through the media method as proposed by Maroco (2007).

All analysis was performed in the Statistical for Package for Social Sciences (SPSS), version 20. The level of significance was set at  $p < 0.05$ .

### **3.2– Ethical considerations**

The study complied with all ethical guidelines for conducting human research (Appendix IX).

Ethical approval was obtained from the directorate of the primary healthcare institution where the study was conducted (Appendix X). Furthermore, the two nurses who participated in the implementation program of the TP methodology and the participants were informed by the researchers about their rights, objectives, and study procedures (Appendix XI). All participants gave their written consent. Results are presented anonymously with full respect for confidentiality of all participants.

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## **CHAPTER IV - Contributions for the Portuguese adaptation to nursing care of the Parent-Caregiver Relationship Scale - parents' version**

In this chapter we present the study developed in order to adapt and validate the Parent-Caregiver Relationship Scale - parents' version (PCRS) for nursing care. This study is entitled: Contributions for the Portuguese adaptation to nursing care of the Contributions for the Portuguese adaptation to nursing care of the Parent-Caregiver Relationship Scale - parents' version.

An article of this study was submitted, in 2015, in Portuguese language, to *Revista Latino-Americana de Enfermagem*.

## **Abstract**

**Aims:** To describe the process of the Portuguese adaptation to nursing care of the Parent-Caregiver Relationship Scale – parents' version (PCRS); to describe the psychometric properties of the Portuguese version; to present the results of a first study on parental perception of the relationship quality with nurses who were monitoring their children's health. **Method:** The validity of the scale construct was performed through an exploratory factor analysis and the method of principal component analysis through a varimax rotation. Internal consistency was assessed by Cronbach's alpha and for items reliability the Kendall correlations were used. **Results:** The sample comprised 126 mothers of two year old children. Three factors were extracted: Trust/Care; Relational/Emotional; Collaboration/Partnership with Cronbach alpha index between 0.94 and 0.77 explaining the 54.8% variance. The items reliability was assessed through significant correlations. Mothers had positive perception on the quality of the relationship with nurses ( $M=4.32$ ;  $SD=0.40$ ). From the variables under study, Trust/Care ( $M=4.42$ ;  $SD=0.42$ ) have reached major significance whereas the Relational/Emotional variables evidenced the worst results ( $M=4.13$ ;  $SD=0.60$ ). **Conclusion:** The scale has a psychometric value for the Portuguese population. Its use in nursing care contexts may enable to identify the clients' perceptions/expectations when establishing a relationship with the nurse.

**Descritores:** Relação pais-enfermeiro(a); Parceria; Confiança.

**Descriptores:** Relación Padres-Enfermero; Asociación; Confianza.

**Descriptors:** Parents-Nurse Relationship; Partnership; Trust.

## Introduction

In a first systematization of child and family-centered nursing, the need for the nurse to consider the children social and family contexts is highlighted, acknowledging and responding to children's fears and concerns and establishing with both child and family a relationship based on trust<sup>(1)</sup>.

The elements of child and family-centered care mentioned in this first systematization underlie the most recent guidelines of Family-Centered Care of the *Institute for Patient and Family-Centered Care*, namely: sharing all relevant information with the family; listening and honoring patient and family perspectives and choices; incorporating patient and family knowledge, values, beliefs and cultural backgrounds into the planning and delivery of care; engaging patients and families in their care as collaborative members in treatment decision-making the development of health programs and health policy; considering family' ability and will to commit<sup>(2)</sup>.

Amongst these principles, two are of significant relevance for nursing care in paediatrics. First is the belief that family, especially parents, should be considered the main child caregivers, potentially capable of discussing and taking decisions concerning their child. Second, the idea that the proper family's involvement is only accomplished by establishing a partnership relationship between family and health professionals enabling information sharing and partnership adjustment to each family expectations and contexts.

Studies on parental needs<sup>(3)</sup>, and parental satisfaction<sup>(4)</sup> with their interaction with healthcare showed that they value: (i) trust; (ii) availability, empathy and respectful behaviours; (iii) collaboration/partnership.

### (i) Trust

It is highly consensual that trust includes the belief that "you can rely on the other to act according to your own needs and expectations".

Three domains were identified in the assessment of "Trust" in the context of healthcare: technical; inter-personal; and protection and loyalty<sup>(5)</sup>.

The technical domain includes the health professional technical skills to manage or solve the health problem and/or the problem triggering suffering; the inter-personal domain takes in account the communication skills, information reliability, and the patient-centered care provision; the protection and loyalty domain, addresses the belief that the health professional will always act with authenticity and compliance to patient's needs.

More recently the ethical confidentiality principle (e.g. the belief that private information will not be unnecessarily disclosed) was also added to the trust construct<sup>(5)</sup>.

Trust has been identified as a predictor of higher level of satisfaction with healthcare<sup>(4)</sup>. Moreover, trust towards health professionals has been related to increased levels of child and family well-being<sup>(6-7)</sup>, adherence to treatment<sup>(3,8-9)</sup> and parental involvement in the child's treatment decision-making<sup>(10)</sup>.

(ii) *Availability, respect and empathy attitudes*

The majority of studies on parental experience of their children' illness showed that positive and collaborative attitudes from health professionals are both an important element of their relationship with the health team and a predictor of better adaptation to the transition process of parenting<sup>(11-13)</sup>.

Studies highlight that parents value the easy access to health professionals caring for their children; health professionals' commitment to listening to them and to clarify all doubts; and health professionals' respect for their value as parents and caregivers

Besides the availability and respectful attitudes, parents equally value empathy. Empathy is described as *"the perception of the other personal traits, including emotions and meanings, as if it was a self-projection, but still considering 'if' as a condition"*<sup>(14)</sup>. Hence, empathy includes a self-referential decentring, neutrality and most importantly receptiveness to understand behaviours and parental needs, taking into account their beliefs and their context<sup>(15)</sup>.

(3) *Collaboration and partnership*

When addressing the nursing professional performance it is clear that the search for empathy in interactions and the establishment of partnership relationships with parents/family underlie client's satisfaction<sup>(16)</sup>.

Empathy and partnership with parents/family have been associate with higher levels of parental satisfaction with nursing care<sup>(16)</sup>. Both evidence and experience show that parents value not only the professionals' skills to give update information and support but also to assess parents wish to participate in the discussion, design and implementation of the child care plan<sup>(3)</sup>.

Despite the different opinions on the appropriate degree of parental commitment or on the definition of both parents and health professionals' role in the partnership process<sup>(17)</sup> several studies outcomes evidenced that the majority of parents wishes to actively collaborate and engage in partnership with health professionals<sup>(18)</sup>. Moreover, the partnership involving parents and health professionals has been related to a decrease in emergency attendances, improvement on health indicators, higher satisfaction levels and

improved response to the child and family demands when addressing the child with special care needs<sup>(11,19)</sup>.

Despite the recognition of the relevance of the relationship quality between parents and health professionals to promote the improvement of health care, there are still few questionnaires on parental perception to assess this relationship quality. Moreover, there is also few existing research (especially in Portugal) on parental satisfaction with healthcare; on the factors influencing that satisfaction level; and on nursing contributions to that indicator. Aiming to bridge this gap, the present study goals focus on the Portuguese adaptation to nursing care of the *Parents-Caregivers Relationship Scale–parents’ version*.

### *The Instrument*

The *Parents-Caregivers Relationship Scale–parents’ version* (PCRS) was designed to assess the perceived relationship quality between parents and child professional caregivers<sup>(20)</sup>. The scale’s structure is similar in both versions, parents and professionals, enabling comparison between quality relationship perceptions on both groups. The authors based its design in literature review and in the results on interaction dimensions assessed through interviews performed with parents and child day care centre professionals. Concepts emerging from these two sources identified eight dimensions to characterize the relationship: trust; free communication; respect/acceptance; caring; competence/knowledge; partnership/collaboration; value sharing; affiliation/”appreciating something”. For each dimension three to four statements emerged in a total of 35 items comprising this PCRS. Items are assessed with a Likert type scale with optional answers ranging from 1 (totally disagree) to 5 (totally agree).

In the background study considered for the design of the original scale, 124 parents and 124 education professionals (e.g. kindergarten teachers) participated. The factorial exploratory analysis with varimax rotation has revealed a structure based on a three factor solution explaining the 43% variance on the parents’ scale and 48% variance on the professionals’ scale. The three factors include the eight dimensions underlying the scale and simplify the structure. Thus, the following factors were identified: “trust”; “collaboration”; and “affiliation” for parents, and this latter identified as “caring”, in the the professional version. The “trust” factor includes the acknowledgement of technical and relational competencies, respect values and commitment to child care; for “collaboration”, promotion attitudes of partnership while caring for the child, as well as communication and information sharing, are addressed; “affiliation/caring” comprises relational/emotional

features in the parents version scale while in the professionals version scale this means empowering parents with the ability to “care” for their children.

Psychometric properties were equally assessed. To assess reliability a Cronbach  $\alpha$  Coefficient was used reaching values for global scale of 0.93 (parents version) and 0.94 (professionals version). For sub-scales the following alpha values were obtained: parents’ version “trust” – 0.91, “collaboration” – 0.90, affiliation – 0.75; professionals version “trust” – 0.92, “collaboration” – 0.90, and “caring” – 0.84. Results from Test-retest of two to four weeks following the first survey showed reliable stability with values ranging from  $r=0.59$  to 0.78 ( $A=0.69$ ). This PCRS was hence considered a reliable assessment instrument for this study.

### *Aims*

This study aims (1) to analyse the psychometric properties on the adaptation of the Parents-Caregivers Relationship Scale addressing the interaction parents-nurses; (2) to assess parental perception of the relationship quality with the nurse responsible for monitoring their child’s health.

## **Method**

### *Participants*

The study sample comprised a total of 126 female participants, mothers of 2 years old children that were attending the same health centre and the nursing team monitoring their children’s health. The participants average age was 31 ( $SD=6.5$ ) ranging between 18 and 48 years old.

### *Data collection process*

The study complied with all ethical guidelines for conducting human research. Hence, participants’ approval and consent were obtained, upon authorization from all parties involved, including the Ethics Committee of the Health Care Centre. Data confidentiality was assured and participants were previously informed of the study objectives, being contacted by the researchers. The scale was delivered and mothers were asked to fill the data and then place it in a sealed box. Anonymity was also ensured and participants were informed that they could withdraw participation at any time of the study.

Data collection occurred between April and December 2013.

### *PCRS Translation*

After authors’ authorization, the scale was translated from its native language, American English to Portuguese by two expert researchers in scales translation. The process

continued with back-translation by a native English speaker. Since the original scale relates to the interaction between parents and educational caregivers (e.g. kindergarten teachers) the language was adapted to nursing (e.g. using “nurse” instead of “teacher”) and reviewed by three paediatric nurses. Latter the conceptual and linguistic scale’s correspondence was analysed by three experts, one on Portuguese Language and two on Nursing. To complete the process and in order to assess items comprehension, a scale pre-test was conducted involving three couples, parents of children that surveillance health in Primary Health Care Center. A native English speaker, external to the team, validated the final content of the translation.

To the final instrument version (instructions, items and response options) the researchers validated all information gathered during the process concerning the correspondence between terms and concepts and items comprehension. The researchers then proceeded with an analysis on the scale psychometric properties.

## **Results**

### ***Aim (1) Study on the psychometric properties of the adaptation of PCRS***

#### *Psychometric Properties of the PCRS*

To assess the scale construct validity a factorial exploratory analysis with a varimax orthogonal rotation (from SPSS-IBM) was performed.

For internal consistency calculation, a Cronbach  $\alpha$  Coefficient was applied. To assess items reliability a correlation was established between each sub-scale items and the respective sub-total.

#### *Factorial Analysis*

In the original version, the initial factorial exploratory analysis identified 8 factors. These factors were related to the dimensions extracted from the literature review pertaining to the scale design. In a further analysis, authors have only validated three factors, considering this a more adequate and understandable solution: Trust, Collaboration and Affiliation. The three factors confirm the 45% data variance.

The study of the Portuguese version evidences the existence of the eight factors explaining the 70% variance. Accordingly to the authors of the original scale a forced analysis to three factors was made. In a first analysis, a *scree-plot* criterion was found to sustain this solution. After an orthogonal rotation (varimax) the three factor eigenvalues were 8.99; 5.36; e 4.04 respectively. The explained variance was 52.5% with an internal consistency (Cronbach  $\alpha$  Coefficient) between 0.94 and 0.70.

However, in this solution, items 6, 7, 12, 13, 27, 29, 32 e 35 show values commonalities lower than 0.4 (in item 12, this value is bellow 0.3), meaning that the three extracted factors explain a small proportion of the variance in these items. Moreover, item 29 showed similar saturation in factor 1 (0.43) e 2 (0.42). An in-depth items analysis was then performed. Considering that the original scale study aimed to assess parental relationship in the interaction with kindergarten teachers, we tried to understand if it was possible to adapt this scale in order to assess parental relationship in the interaction with nurses. Hence, a panel comprised by four nurses and four couples performed an analysis on the related items. From this analysis, items 12, 29 e 35 were excluded since they were considered less relevant for the interaction parents-nurses assessment.

A new exploratory factorial analysis was then performed. Once again this is an analysis based on scree-plot criterion. The related values pertaining to the three factors were: 12.3; 3.4; and 1.9 (first, second and third factors respectively). After a orthogonal varimax rotation, the eigenvalues on the three factors changed to 8.6; 5.0 and 3.9, enabling to reach stability between the explanatory strength of each factor.

Table 1a shows saturation values of variables (items) in the three extracted factors (after varimax rotation). The first factor comprises 19 items, the second considers 9 items and the third includes 4 items. The table shows good internal consistency levels, Cronbach  $\alpha$ , presenting values over 0.76 in the three factors.

Table 1a - Saturation values by factor and correlation between the 32 items and Sub-scales and global Scale (Kendall correlation Coefficient), Angra do Heroísmo, Azores, Portugal, 2013.

Item	Factor 1	Factor 2	Factor 3	Global Scale
3	,567*			,486*
4	,660*			,627*
5	,600*			,578*
7	,537*			,501*
8	,548*			,502*
9	,569*			,515*
10	,586*			,532*
14	,661*			,631*
15	,556*			,476*
20	,595*			,544*
21	,624*			,587*
22	,635*			,558*
25	,640*			,595*
26	,652*			,606*
27	,495*			,445*
28	,656*			,603*
30	,622*			,578*
31	,630*			,543*
32	,494*			,443*
1			,632*	,364*
2			,758*	,434*
11			,639*	,434*
24			,709*	,517*
6		,532*		,376*
13		,481*		,442*
16		,601*		,498*
17		,613*		,522*
18		,569*		,411*
19		,593*		,516*
23		,613*		,523*
33		,589*		,444*
34		,627*		,531*

\* Highly significant correlation ( $\alpha=0,01$ ).

This solution presents an explained variance of 54.8%. Items 6, 13, 27 e 32 show commonality values lower than 0.4. However all items present values over 0.3.

Items reliability was also assessed through the correlation calculation between each item comprising each sub-scale (specific to the three identified factors) and the specific sub-

scale total. Kendall<sup>1</sup> correlations were found highly significant ( $\alpha=0.01$ ) between the several items comprising the sub-scales and the specific sub-scales. The 32 items displayed in Table 2a show strong correlations with the global Scale.

Despite some identified differences, the structure is very similar to the three sub-scales found in the original version, namely: Factor 1- Trust/Care; Factor 2- Relational/Emotional; Factor 3- Collaboration/Partnership.

Table 2a – Medium saturation values in variables of the three factors extracted from the Scale and on the overall Scale, Angra do Heroísmo, Azores, Portugal, 2013.

	<i>M</i>	<i>SD</i>	Maximum	Minimum
<b>Factor 1 –</b> <i>Trust/Care</i>	4.42	0.42	5	1
<b>Factor 2 -</b> <i>Relational/Emotional</i>	4.13	0.60	5	1
<b>Factor 3 -</b> <i>Collaboration/Partnership</i>	4.29	0.51	5	1
<b>Global Scale</b>	4.32	0.40	5	1

### ***Aim (2) To assess parental perception of the relationship quality***

As shown in Table 2a, parents evidenced a positive perception of the relationship quality with nurses ( $M=4.32$ ;  $SD=0.40$ ).

Comparing the results found in each factor/dimension it is clear that sub-scale - Trust/Care – was the one registering a higher medium value ( $M=4.42$ ;  $SD=0.42$ ), followed by sub-scale – Collaboration/Partnership - ( $M=4.29$ ;  $SD=0.51$ ) and by sub-scale - Relational/Emotional - ( $M=4.13$ ;  $SD=0.60$ ).

### **Discussion**

Concerning the scale adaptation, results evidence that overall the PCRS shows good psychometric properties, with Cronbach  $\alpha$  values validating this scale as a reliable assessment instrument.

As to the factorial analysis, the Portuguese version adapted to nursing care, has identified a factorial structure similar to the original scale, distinguishing three factors corresponding to the 3 relational factors/dimensions mentioned in literature, namely: Trust/Care; Relational/Emotional; Collaboration/Partnership. To the design of the Portuguese version,

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<sup>1</sup> All correlations would have remained highly significant if a Spearman correlation coefficient was used.

items 12, 29 and 35 from the original version were excluded, for showing low value commonalities and for being considered by an expert nurse panel less relevant indicators when assessing nursing care.

The Trust/Care factor/dimension comprises saturation items in factor 1. Consistent with the literature this dimension includes technical skills (e.g., *My son/daughter's nurse has the necessary knowledge and skills to be a good nurse.* (item 9), communication and relational skills (e.g., *My son/daughter's nurse gives me good suggestions and advice on how to deal with my child.* (item 25), loyalty and protection values (e.g., *I feel that my son/daughter's nurse truly worries about my child.* (item 4). The Relational/Emotional factor/dimension comprises saturation items in factor 2. It regards to the interrelation quality and to the professional healthcare characteristics that parents value as contributions to the relation, namely empathy and their availability to answer to parental needs and concerns (e.g., *I know that my son/daughter's nurse will come to help me whenever I need, even if it means changing his/her personal plans.* (item 24). The Collaboration/Partnership factor/dimension includes saturation items in factor 3 and concerns collaboration quality, parent involvement in child health care discussion, and partnership with health professionals in the health plans for their children (e.g., *Me and my son/daughter's nurse rarely discuss issues related to my child's care.* (item 6). In this factor/dimension also includes related to loyalty values and respect for parents privacy (e.g., *Sometimes I am concerned that my son/daughter's nurse will discuss my private matters with other people.* (item 13).

The second aim of this study was to assess parental perception of their relationship quality with the nurse who is responsible for their children health monitoring in primary care. Results evidenced that, in general parents perceived high levels of quality in this relation.

These results evidenced that parental perception related to the relationship quality with the nurse has a positive impact in the child health screening. This perception might be interpreted as the result of the nurses' mobilization in practice of the three key indicators of interpersonal relationship (Trust/Care; Relational/Emotional; Collaboration/Partnership), the core concept in Professional practice, underlying the therapeutic relationship guidelines, developed and strengthened throughout a dynamic interaction in which the nurse and client/family/community play an important role as partners during the entire process<sup>(21)</sup>.

The factor identified by mothers as the most satisfactory "Trust/Care" represents an important role in parental perception concerning the interaction quality with the nurse and it is closely related to client's satisfaction levels<sup>(4)</sup>, child-family wellbeing<sup>(6-7)</sup>, compliance and treatment adherence<sup>(3,8-9)</sup> and to parental commitment to decision-making pertaining the child treatment<sup>(10)</sup>. On the other hand, highly positive outcomes in

“Collaboration/Partnership” factor shows satisfaction and parental involvement in decision-making concerning the child treatment<sup>(6,16)</sup>. These results also reveal that parents wish to actively engage in a collaboration and partnership process with the health professional<sup>(18)</sup> and that once this is accomplished it leads to a decrease in emergency consultations, improvement in health indicators and greater parents’ satisfaction<sup>(11,19)</sup>. The “Relational/Emotional” factor is consistent with the relevance given to professionals’ positive attitudes, determining parents adaptation and the relationship established with the health team<sup>(11-13)</sup>, with empathy being highly considered by parents<sup>(15-16)</sup>.

Considering the increasing need to update knowledge and improve quality in nursing care provision and since the quality of care is related to parents-nurse interaction quality<sup>(22)</sup>, this may be an important instrument to the reflection process and practices analysis taking into account all its dimensions that enable to assess parents perception on the interaction quality with the nurse.

Some limitations were identified in this study that has to be considered in the results’ analysis. Hence, if on one hand the sample dimension does not allow the extrapolation of results to the majority of the population, on the other hand, it must be referred that this study was developed in a specific service designed to health promotion and disease prevention through child health screening consultations in the different child development stages and through a continuous monitoring of the child/family. Thus, this might explain the potential missing information on parental perception in other clinical practice contexts. Despite the constraints, this presented scale might be considered a valid instrument explaining the parental perception concerning parents-nurses relationship quality, enabling service adjustments and the adaptation to more suitable family intervention approaches and strategies.

## **Conclusion**

The scale analysis and adaptation has shown to be a reliable instrument that can be disseminated considering its psychometric value and robust internal consistency. The existence of a validated scale to the Portuguese population may be seen as a very useful instrument to nurse’s clinical practice in health centres while working with families during child health screening consultations. Its application in child health and paediatrics nursing clinical practice contexts might enable to identify parental perceptions and expectations on the relationship with the nurse and thus be an opportunity to implement management procedures and self-professionals’ consciousness towards consumer satisfaction and the relationship established with families. Considering the identified constraints, researchers

find necessary to apply this scale in other health contexts and other study samples involving children with and without a health or development risk.

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## **CHAPTER V - Associations and determinants of infant development and mother-infant quality of interactions in Portuguese dyads**

In this chapter the study about the associations between mother-infant quality of interaction and infant development and infant and family factors determinants of mother-infant quality of interaction and infant development is presented. This study is entitled: “Associations and determinants of infant development and mother-infant quality of interactions in Portuguese dyads”

An article of this study was submitted, in 2015, in English language, to *Merrill-Palmer Quarterly: Journal of Developmental Psychology*.

**Abstract:**

This research studies the association between mother-infant quality of interaction and infant development. Moreover, we investigated the determinants of mother-infant quality of interaction and infant development from a range of infant and family factors. The sample included 86 healthy infants (46 girls, 48 first born) and their Portuguese mothers varying in SES backgrounds. At 11-months, infant development was assessed with Schedule of Growing Skills II (SGS II). To assess mother-infant quality of interaction, the dyads were observed in free play at 12-months using the Crittenden CARE-Index. Maternal sensitivity and infant cooperative behavior were correlated with SGS II global scores and most of sub-scales (except for Locomotor and Self-care Social). Family attendance of nursing visits at Primary Health-Care Center and infant gestational age predictive infant development. Infant behavior, infant gestational age and infant feeding in first-three months of life predicted maternal sensitivity. Infant cooperative behavior was determined by his/her number of siblings and mother behavior.

**Keywords:** Infant development, maternal sensitivity, infant cooperation.

## INTRODUCTION

Several development and attachment theorists like Bowlby, Ainsworth, Stern, or Brazelton have emphasized the critical significance of early caregiving relationships in shaping child social and emotional development. According to attachment theory the quality of care provided to the child, particularly parents' sensitivity and responsiveness promotes attachment security (Ainsworth, 1965; Bowlby, 1969/1982). Yet, less was proposed and investigated concerning maternal sensitivity and child cognitive, motor and language gains.

### ***Maternal sensitivity as a concept***

Although operational definitions of maternal sensitivity vary from study to study (revision in Beeghly, Fuertes, Liu, & Delonis, 2010), Ainsworth originally defined it as a mother's ability to perceive and to accurately interpret the signals and communications implicit in her infant's behavior and, given this understanding, to respond to them appropriately and promptly (Ainsworth, Bell, & Stayton, 1974).

Maternal sensitivity during the first year of life remains the best single predictor of infant secure attachment across studies, despite relatively small effect sizes. In their meta-analytic review, De Wolff and van IJzendoorn (1997) report a significant low-to-moderate ( $r = .24$ ) association between maternal sensitivity and mother-infant attachment. Further support for the association between maternal sensitivity and infant secure attachment comes from some evidence showing that secure attachment can be enhanced by promoting maternal sensitivity (Bakermans-Kranenburg, van IJzendoorn, & Juffer, 2003).

Some argue that the somewhat moderate association between maternal sensitivity and mother-infant attachment results from the operationalization of the sensitivity concept (revision in Beeghly et al., 2010). Many attempts have been made to develop the concept of sensitivity further, but there is a lack of consensus among researchers as to which attributes of maternal behavior are constitutive elements of sensitivity. In their pioneering study, Ainsworth et al. (1971) established four main attributes for assessing maternal sensitivity in early mother-infant interactions: sensitivity, acceptance, cooperation, and accessibility. Infants develop internal working models regarding their caregivers' availability and responsiveness and act according to their interaction-based expectations (Bowlby, 1969/1982; Main, Kaplan, & Cassidy, 1985; Sroufe, & Waters, 1977). Therefore, infants adapt their behavior to parents' responses. In turn, parents read infants' behavior and adjust their own behavior according to how their infants react.

Taking into account this mutual influence, some researchers claim for a more dynamic and reciprocal concept of maternal sensitivity (revision in Beeghly et al., 2010). van den

Boom (1997) stated that maternal sensitivity reflects a dyadic interaction and therefore is meaningless without the consideration of both partners. Like Bowlby, many developmentalists and family theorists stressed that socialization is a bi-directional, reciprocal, relationship-based process between infant and caregiver (e.g., Brazelton, Koslowski, & Main, 1974; Bronfenbrenner, & Morris, 1998; Harrist, & Waugh, 2002; Bronfenbrenner, 2005).

The use of dyadic measures in infant-caregiver research has increased during the last two decades. However, similar to the definition of maternal sensitivity, the task of reconceptualizing “the quality of infant-caregiver interaction” in dyadic terms has led to multi-construct definitions and a wide range of assessment methods (Beeghly et al., 2010). For instance, some researchers have focused on the dyadic interaction, namely “mutuality” or “reciprocity”, a bi-dimensional construct operationalized as contingent responsiveness and shared positive affect (e.g., Aksan, Kochanska, & Ortmann, 2006; Crittenden, & Bonvillian, 1984). In contrast, others have explored “dyadic co-regulation and coordination” (e.g., Evans, & Porter, 2009), the related constructs of “synchrony” or “connectedness” (e.g., Isabella, & Belsky, 1991; Raikes, 2007), and/or dyadic reparation of mismatches in engagement (e.g., Tronick, & Cohn, 1989). In addition, certain investigators (e.g., Landry, Smith, & Swank, 2006) have evaluated infant-caregiver joint attention processes.

The present study is based on the Claussen and Crittenden (2000) concept of maternal sensitivity, which is a dyadic (mother-infant bi-directional) and relationship-based construct. According to a dyadic approach of maternal sensitivity, infant contribution must also be considered, and in normal interactions, children tend to be reciprocal and cooperative, express their feelings openly, and use social and play experiences as opportunities to learn and develop (Ainsworth et al. 1978; Goldberg, & DiVitto 1995).

### ***Maternal sensitivity and infant development***

A large body of research indicates that mothers contribute to infants’ positive developmental outcomes (e.g., Bus, & van IJzendoorn, 1988; Greenberg, Speltz, & Deklyen, 1993). Nevertheless, most research links maternal sensitivity to socio-emotional outcomes. Indeed, maternal sensitivity is predictive of a wider array of child outcomes, beside infant attachment, such as better emotional and physiological regulation (see Calkins, & Hill, 2007, for a review), lower levels of aggression (e.g., Leerkes, Nayena Blankson, & O’Brien, 2009), behavioral problems and affect dysregulation (e.g., Bernier, Carlson, & Whipple, 2010; Leerkes et al., 2009; Tamis-LeMonda, & Bornstein, 1996). However, fewer research reported strong and direct associations between maternal

sensitivity and maturity of object play (Bigelow et al., 2010), gains in language acquisition (e.g., Leigh, Niever, & Nathans, 2011; Bernett, Gustafsson, Deng, Mills-Koonce, & Cox, 2012), and cognitive outcomes (Bernier et al., 2010; Bus et al., 1988).

Infant cognitive, social and motor competencies are developed in daily objectal and social experiences. Mothers play an important role in promoting infant development by introducing their infant to new experiences, scaffolding emerging skills, and providing opportunities for the practice of developing capacities (Feldman, Eidelman, & Rotenberg, 2004). The first year of life is a particularly critical period during which infant development changes rapidly. At the end of the first year of life, infants begin to introduce some symbolic actions into their functional play, the emergence of which is seen in the infant's first words, gestures and play. Infant symbolic competence develops at the "zone of proximal development" (Vygotsky, 1979) and requires the adult's sensitive elaboration of the infant's behavior into a shared meaning. Indeed, according to Vygotsky, the adult guides the child by working one step ahead of the child's emerging skills and offering the child support to shift to a progressive symbolic complexity. By offering age appropriate experiences, parents help infants to maintain attention for longer periods, to gain manual practice, to persist in their curiosity during exploration, and to engage in reciprocal interactions required to enhance infant cognitive development (Bernier et al., 2010; Leerkes et al., 2009; Tamis-LeMonda et al., 1996). In turn, gains in infant development encourage parents to engage in more rewarding and sophisticated interaction (Landry et al., 2006).

### ***Challenges for maternal sensitivity***

Taking in account that infant development and maternal sensitivity (or dyadic interactivity) are related and each shape the other. One must note that some factors challenge maternal ability to detect and respond to infant cues in a warm, responsive, developmentally-appropriate, and accurate manner. These factors include maternal psychopathology (Kemppinen, Kumpulainen, Moilanen, & Ebeling, H., 2006), depression (Goodman, & Brand, 2011; Hagen 2002; Huang, Costeines, Ayala, & Kaufman, 2014), low SES (Fuertes, Faria, Soares, & Crittenden, 2008; Kobak, Cassidy, Lyons-Ruth, & Ziv, 2006; Sameroff, Seifer, Zax, & Barocas, 1987), and motherhood in adolescence (Hans, &Thullen, 2009).

All these contributions for human development can be interpreted in light of the Bioecological model (Bronfenbrenner et al., 1998; Bronfenbrenner, 2005). This model takes into account four main components: process (interactions and activities with the important people, symbols, and objects in the developing individuals' lives), person

(biological and personal characteristics - demand, force and resource - and also, genetic aspects), context (involves four different interrelated systems: micro, meso, exo and macro in which children spend significant time interacting and occur proximal processes), and time (developmental processes vary according to the specific historical events that are occurring as the developing individuals are at one age or another) (PPCT) and the dynamic, integrative relationship among them. According to this model, infant development occur through processes of interaction between the child and the persons, objects, and symbols in her immediate and more remote environment in which she interacts during an extended period of time. According to Bioecological model distal (e.g., SES) and proximal (e.g., maternal sensitivity, pregnancy at risk) factors will affect infant development.

### *The Present Study*

The primary goal of the present study was to investigate the association between mother-infant quality of interaction and infant Active Posture, Locomotor, Manipulative, Visual, Hearing and Language, Speech and Language, Interactive Social, Self-care Social; Cognition and global development in a Portuguese sample composed by 86 healthy infants and their mothers. Taking the bioecological model this study in order to study the following processes infant development, maternal sensitivity and infant cooperative behavior we taking in consideration individual variables (the person) namely, gestational age, infant gender, APGAR, birth weight, pregnancy planned; and contextual variables like number of siblings, pregnancy at risk, SES, maternal employment status, family attendance of nursing visits at Primary Health Care Center during pregnancy and maternal years of formal education.

Although, bioecological model is used to guide the present research in the sense that we hope to characterize multiple influences in development, the absence of time measures and observations in children life contexts make it impossible to consider this as an ecological study of infant development.

Past studies have presented the significance of SES and maternal education in mother-infant relationships and infant development in Portuguese dyads (e.g., Fuertes et al., 2008; Fuertes, Beeghly, Santos, & Tronick, 2009, 2011). Indeed, the degree of maternal education and SES were significantly related to attachment status in several studies (Fuertes, et al., 2011; Monteiro et al., 2010). One study compared the impact of premature birth and low income on Portuguese mother–infant dyads and the economic factor by itself seemed to affect mother–infant interaction as much as two risk conditions aggregated, in this case, premature birth and low income (Fuertes, et al., 2008).

Compared to other samples collected in Western countries, maternal formal education in Portugal is considerably lower. According to the latest available data from the Statistics Portugal (2014), the indices for Portuguese women's education in 2013 are: 24.1% completed up to 4 years (first grade of basic school), 9.7% completed 5 to 6 years (second grade of basic school), 18.1% completed 7 to 9 years (third grade of basic school), 18.1% completed 10 to 12 years (secondary school level), and 17.3% completed more than 12 years and obtained a College/University degree. Moreover, in typical Western countries, maternal education and household income are highly positively correlated (e.g., Bugental, & Happaney, 2004).

Another feature of Portuguese society is the increase in social economic problems due to a sudden and abrupt economic crisis that has affected the Portuguese economy since 2010. The rate of unemployment increased in three years from approximately 10 to 18%, together with a large increase in taxes. The national decrease of SES conditions mainly occurred by 2013 at the time when data were collected. Thus, Portuguese research can contribute to the increase knowledge on the impact of SES on child development and on mother-infant quality of interaction. However, little is known concerning maternal sensitivity and child development in Portuguese dyads.

Taking into account these Portuguese specificities, we aim to evaluate how the infants and respective families contribute towards infant development and mother-infant quality of interaction. With respect to the literature, we expect improved infant developmental outcomes to be more likely in dyads with higher maternal sensitivity and infant cooperation. Also, considering research from past studies, we expect that low levels of maternal education, and family economic problems, will have a negative impact on infant development and on the quality of mother-infant interaction and may predict those factors.

## **METHODS**

### ***Participants***

Participants were 86 healthy Portuguese infants (46 girls; 40 boys, 48 first born), their mothers ( $M$  maternal age=30.63 years,  $SD$ =6.402, range: 18-48). Except for two infants (one born with 34 weeks of gestational age and another with 36), all were full-term.

All infants were healthy and clinically normal at delivery as determined by pediatric examination. Infants' birth weights ranged from 2060 to 4840 grams ( $M$ =3276.45,  $SD$ =508.267) and their weeks of gestational age at delivery ranged from 34 to 41 weeks ( $M$ =38.98 weeks,  $SD$ =1.389). APGAR scores at 5- minute ranged from 8 to 10 ( $M$ =9.82,  $SD$ =.495). No infants had any known sensory or neuromotor disabilities, serious illnesses, or congenital anomalies.

Mother- infant dyads were recruited at the Primary Health Care Center of Angra do Heroísmo, Terceira island, Azores, Portugal. The ethnicity of the participants was primarily Portuguese Caucasian, and most were from middle-class socio-economic backgrounds according to the Graffar Social Classification (12.9% were families with low-income, 34.9% were lower middle-class, 31.4% were middle-class, 11.6% were upper middle-class and 9.3% were upper class). Graffar is one of the most used measures in Portuguese research (validated in Portuguese samples by Amaro in 1990 and revised in 2010) in order to determine families SES.

Although fathers are not participants in this study, they are significant figures in children's life. Therefore, we collected some information regarding with fathers.

All parents were literate but the level of completed education varied: 24 (27.9%) of the mothers and 29 (33.7%) of the fathers completed mandatory education (9 years), 18 (20.9%) of the mothers and 16 (18.6%) of the fathers completed high school (12 years) and 23 (26.8%) of the mothers and 14 (16.3%) of the fathers had obtained a college degree or higher education. The remaining 21 mothers (24.4%) and 24 fathers (27.9%) did not complete mandatory education. Unemployment affected only mothers (18 were unemployed).

According to medical records, no parents had any known mental health or drug/alcohol addiction problems. Most of these parents, lived always in Terceira island and used the same Primary Health Care Center or were used other from the island and the files were transferred to current Primary Health Care Center. Thus, their medical records are completed since their birth.

All infants lived with both parents in the same household, with the exception of five children that lived solely with their mothers.

Taking some parents economic problems, in this study 17 infants (19.8%) were fed with cow's milk after 3 months, against medical advice. Feeding infants with cow's milk before 12 months can harm their health and neurological development (WHO, 2005). However, according to the reports from these families, this decision was taken when mothers could not breastfeed their infant (for instance because they had to return to their jobs) and could not afford to purchase formula. Thus, in our study, 11.6% of infants were not breastfeeding; 88.4% were breastfeeding on the first month of life; 30.2% were breastfeeding on the first 6 months or more. Taking Dangal, (2007) definition, a pregnancy is at risk when any maternal or fetal complications are present that could affect the health or safety of either the mother or baby and can be associated to risk factors such as: maternal age below 19 or above 35 years old; genetic problems in the father /mother

family; maternal mental disease; existence of a child with genetic problems or malformations; maternal exposure to radiation, infections, drug or alcohol abuse; maternal diabetes or other chronic illness. In our study, 13 mothers (15.12%) had a pregnancy at risk associated to mother age and 6 mothers (6.98%) had a pregnancy at risk associated to maternal diabetes or other chronic illness.

## **Procedure**

### *Recruitment*

Over a 1 month period, a female research assistant contacted potential participants at Primary Health Care Center of Angra do Heroísmo (Terceira Island) and explained the study's purpose and procedures. To determine eligibility, after mothers signed an informed consent form, were administered a brief interview to collect demographic information. With the parents' consent, information from the infant's and parent's health status was extracted from their medical record of the Primary Health Care Center and additional data were asked of parents. A total of 96 eligible families agreed to participate in this longitudinal study. Of these, 10 infants lost their eligibility for different reasons such as: death of child/mother, changed residence, significant delay in infant development, autism spectrum disorder symptoms or by dropping out of the study. The result was a sample of 86 mother- infant dyads.

### *Follow-Up Visit Procedures*

The 86 dyads participated in 2 laboratory follow-up visits. The first visit took place around 11 months ( $M=11$  months and 10 days;  $SD=5.42$ ) where their development was assessed using the Schedule of Growing Skills II (Bellman, Lingam & Aukett, 1996). Following this assessment, mothers provided information through the use of: Family Support Scale (Dunst, Jenkins, & Trivette, 1984), Family Needs Survey (Bailey, & Simeonsson, 1988), and Graffar Social Classification (Graffar, 1956).

The second visit media took place in mean 12 months and 4 days of life ( $SD=6.19$ ) when the quality of mother-infant interaction was videotaped during independent free play situations. These videotaped free play protocols were later scored with CARE-Index (Crittenden, 2003).

## **Measures**

### *Medical and Familial Demographic Information*

At the 11 months visit, mothers were interviewed about their infant's medical status and familial demographics. In Portugal, all parents have their children's medical record since birth – “the Baby health book”. We requested permission to collect data from this book.

Medical and demographic factors included the infant's delivery method, APGAR score at 1 and 5-minute, gestational age at delivery, birth growth measurements (weight, length, head circumference), gender, parity, health status at delivery, prenatal health care (number/frequency of medical consultations), pregnancy health status (normal or at risk), and infant health conditions (identification, frequency and severity). Mothers reported the family attendance of medical and nursing visits at Primary Health Care Center (during pregnancy and after the infant's delivery) and frequency of these visits, family socioeconomic status, parents' years of completed education, age, employment status, marital status, the infant's diet history (including the introduction of cow's milk in the infant's diet), number of siblings and infant health status during the first year of life.

Since were our aims did not include studying father-infant interactions, we collected little demographic information regarding parents mainly parents years of education, age, employment status, marital status and health status.

#### *Infant Development*

In this study infant development was assessed with Schedule of Growing Skills II (SGS II) at 12 months. The SGS II (Bellman et al., 1996) is a developmental screening tool used to assess the developmental trajectories of children from birth to five years of age and is based on the Sheridan developmental sequences, published in 1975 (Sheridan, 1997) and Griffiths Mental Developmental Scales published in 1967 and revised in 1984 (Bellman et al., 1996). It comprises ten different skill areas: Passive Posture, Active Posture, Locomotor, Manipulative, Visual, Hearing and Language, Speech and Language, Interactive Social, Self-care Social and Cognition. The SGS II allows us to obtain the developmental age and the coefficient of development, both in general and in each distinct area of development.

Two independent trained coders, reliable and blind against the study hypotheses scored the SGS II.

The degree of reliability and validity of the SGS II has been tested with excellent scores (Cronbach, between .88 and .97, Bellman et al., 1996). These scores were obtained without using the subscale of Passive Posture, as it is only applied for babies under 6 months of age, which is not the case in our study.

#### *Family Needs Survey*

Family Needs Survey (Bailey et al., 1988) is an instrument that gives families the opportunity to identify their daily needs in seven content areas like: Information, Family & Social Support, Explaining to Others, Community Services; Child Care; Financial and Professional Support. The original instrument consists of 35 items (and space for

additional topics) which family members can rate on a three point scale of do not need, not sure, and definitely need help with this. Test-retest correlations over a six-month period for total scores were reported to be .67 for a sample of mothers and .81 for fathers (Bailey et al., 1988). In our study, we use the version that was adapted and validated with portuguese families (revised in 1990 by Serrano, Serrano & Correia, 1996).

#### *Family Socioeconomic Status (SES)*

Using Graffar Social Classification (Graffar, 1956, validated in Portuguese samples by Amaro in 1990 and revised in 2010) we aim to assess the families' socioeconomic status (SES) and take into account income, level of education, profession, and type of home using five socio- economic layers.

*Family Support: The Family Support Scale (FSS; Dunst et al., 1984, validated in Portuguese samples by Coutinho in 1999)* allows identifying and quantifying families' sources as they rear their young children, providing information about Helpfulness of support networks. This instrument comprises 19 items divided in five subscales: Informal kinship, Spouse/partner support, Social organizations, Formal kinship and Professional services. Respondents are asked to indicate how helpful various individuals, groups, and agencies have been, indicating the amount of help received from each. The score is indicated on a Likert scale of 5 points from 1 (Not at all helpful) to 5 (Extremely helpful). The degree of reliability and validity of the scale were confirmed in the study developed by Dunst et al., (1984) with an internal consistency of .77 and a confidence level of .75 (coefficient of the bipartition).

#### *Maternal and Infant Interactive Behavior*

At the 12 months lab visits, mothers were videotaped during social interaction with their infants according to the instructions given in the CARE-Index manual (Crittenden, 2003) that is each dyad played alone about five minutes (3 minutes minimum). Mothers were asked to play with the infant as they typically would at home. A standard set of age-appropriate toys was provided for the dyad, arranged on a blanket on the floor of the play room.

Scoring of maternal and infant behavior from the videotaped free play sessions was accomplished using the CARE-Index (Crittenden, 2003). The CARE-Index assesses three dimensions of parents' interactive behavior with their infant (Sensitive, Controlling/Intrusive, and Unresponsive), and four dimensions of the infant's interactive behavior with parents (Cooperative, Compulsive-Compliant, Difficult and Passive). As required by Crittenden (2003), the coder scored parental and infant behavior independently. However, coders should make a dyadic decision to assess parents' and

infants' behavior (Is the mother behavior sensitive in the context of infant behavior, infant age and play interaction?). Indeed, the behavior of each partner was coded from the perspective of the other partner (i.e., the coder scores each partner taking into account the behavior of the other partner). For instance, if the mother smiles while the infant is distressed, the mother's behavior is considered insensitive, whereas, if the mother smiles in response to the infant's smile or attentive face, the mother's behavior is considered sensitive. Note that, although the term "maternal sensitivity" often refers to an individual characteristic, in this scale it is operationalized as a dyadic construct. After scoring, researchers can use independent scores of maternal sensitivity and infant cooperative behavior or compute the mean of both scores as a dyadic score. Generally, maternal sensitivity and infant cooperative behavior are presented as independent scores (Fuentes et al., 2009; Muller-Nix et al., 2004). As well in our study, we want to understand independently maternal and infant contributions (even on a dyadic perspective), therefore independent scores will be presented.

Past research (Fuentes et al., 2008, 2011) indicates that maternal sensitivity and infant cooperative behavior are highly related; however, other maternal and infant scales are independent from maternal sensitivity and infant cooperative behavior scales. In attachment studies, it is important to use all scales since maternal control in most studies is associated with avoidant attachment, and maternal passivity with infant resistant attachment. Nevertheless, outside the field of attachment several studies only present results for maternal sensitivity and infant cooperation (e.g., Aksan, et al., 2006; Crittenden et al., 1984). As this study intends to understand the association between maternal and infant behavior with infant development, it makes sense to use both scales independently.

Two trained and reliable coders scored the CARE-Index. The primary coder was trained to reliability by Crittenden prior to scoring the videotaped protocols in this study and was masked to the study's hypotheses and background variables. All cases were scored independently by the two coders. All disagreements in classification were resolved in conference.

To assess inter-coder reliability, a third trained coder (masked to background variables and the study's hypotheses), re-scored a subset of 20 videotapes. Inter-coder reliability for all three trainers was excellent. The intra-class correlations among the first two coders for mothers' Sensitivity and Infant Cooperative behavior were .94 and .89 respectively, and the ratings for the three coders (taking the final scores achieved by the two coders and the score of the third coder) were .91 and .86 respectively.

Adequate discriminant validity of the CARE-Index has been reported. Differential outcomes using the measure for middle class, low risk mothers, deaf mothers, low income mothers, mothers with mental retardation, abusive mothers, and neglectful mothers have been reported in separate studies (Crittenden et al., 1984). According to our knowledge, no previous study evaluated the relation between of maternal sensitivity with CARE-Index and infant development (Active Posture, Locomotor, Manipulative, Visual, Hearing and Language, Speech and Language, Interactive Social, Self-care Social and Cognition).

### ***Analytic Plan***

A multi-step plan was used to analyze the specific aims of the study. In preliminary analyses, the distributional properties of all study variables were evaluated.

First, descriptive analyses, (means and standard deviations) for maternal sensitivity and infant cooperation and infant development at 12 months, were carried out. Second, associations between maternal sensitivity and infant cooperation with infant development scores (using SGS II subscales) were evaluated using bivariate correlations. The association between maternal sensitivity, infant cooperation and infant development scores with infant and parents' demographics variables was evaluated using bivariate correlations and univariate analyses. Finally, the independent contribution of infant, maternal, and demographic factors to the following variables: infant development, maternal sensitivity and infant cooperation were evaluated using multiple regression analyses. Only variables identified as being significantly associated in the bivariate analyses with dependent variables were in these regressions. In all analyses, statistical significance was denoted using an alpha set at .05.

## **RESULTS**

In the present study, we present the association and correlations among maternal sensitivity scores, infant cooperation scores, infant development scores and demographics.

### ***Descriptive analyses for infant development, maternal sensitivity and infant cooperation***

Using the SGS II global score, our findings indicated that infants were about 12 months of mental age ( $M=7.37$ ;  $SD=.58$ ). In all scales of SGS II infants were nearly 12 months of mental age, except for locomotion that were approximately 11 months and cognition that were around 10 months. In our study, maternal sensitivity varied from 2 (high risk) to 13 (very sensitive) points ( $M=8.12$ ;  $SD=2.45$ ). Similarly, infant cooperation varied from 3 (high risk) to 13 (very sensitive) points ( $M=8.28$ ;  $SD=2.45$ ). Maternal sensitivity and infant cooperation are highly associated ( $r=.884$ ;  $p<.001$ ).

***Association between maternal sensitivity, infant cooperation and infant development***

According to table 1b, most of SGS II subscales are associated with maternal sensitivity and infant cooperation scores, except for Locomotor and Self-care social.

Table 1b - *Pearson Correlations between Maternal Sensitivity and Infant Cooperation with Infant Developmental Scores with Schedule of Growing Skills II*

SGS II	MATERNAL SENSITIVITY	INFANT COOPERATION
Active Posture	.265*	.230*
Locomotor	.156	.102
Manipulative	.215*	.243*
Visual	.408**	.396**
Hearing and Language	.223*	.198
Speech and Language	.285**	.251*
Interactive Social	.262*	.253*
Self-Care Social	.103	.005
Cognition	.349**	.241*
Global Scores	.377**	.317**

\*\* $p < .01$ ; \* $p < .05$

***Association between infant development and demographic variables***

Scores from the SGS II subscales were in general positively correlated with family SES, maternal education, birth weight, APGAR at 5-minute, gestational age and number of nursing visits attended by the family at Primary Health Care Center, and are negatively correlated with the number of infant siblings (see table 2b).

Table 2b - Pearson Correlations between Infant developmental Scores with Schedule of Growing Skills II and Infant or Family Factors

SGS II	SES	NUMBER OF SIBLINGS	BIRTH WEIGHT	GESTATIONAL AGE	APGAR	NUMBER OF NURSING VISITS	MATERNAL EDUCATION
Active posture	.201	-.249*	.195	.249*	.108	.112	.259*
Locomotor	.155	-.254*	.120	.316**	.160	.324**	.282*
Manipulative	.064	-.184	.233*	.335**	-.072	.136	.060
Visual	.179	-.338**	.060	.308*	.072	.155	.156
Hearing and Language	.158	.047	.294**	.202	.016	.154	.148
Speech and Language	-.003	-.033	.107	.158	.220*	.220*	.007
Interactive social	.131	-.264*	.065	.258*	.237*	.102	.098
Self-care social	-.005	-.051	.120	.193	-.002	.232*	-.078
Cognition	.206*	-.177	.125	.343**	.049	-.177	.148
Global score	.192	-.282**	.206*	.397**	.145	.271*	.207*

\*\* $p < .01$ ; \* $p < .05$

According to the test of mean differences, there were significant differences in the scores of SGS II subscales when pregnancy occurred normally versus was at risk, namely in: Locomotor [ $t(83)=2.310$ ;  $p<.05$ ]; Hearing and Language [ $t(83)=3.136$ ;  $p<.005$ ]; Self-Care Social [ $t(83)=1.859$ ;  $p<.05$ ] and overall in Global Scores [ $t(83)=2.734$ ;  $p<.005$ ].

Infants that were fed with cow's milk against medical had worse results in: Active Posture [ $t(83)=13.611$ ;  $p<.001$ ]; Locomotor [ $t(23)=3.823$ ;  $p<.001$ ]; Manipulative [ $t(23)=9.305$ ;  $p<.001$ ]; Visual [ $t(23)=2.850$ ;  $p<.01$ ]; Hearing and Language [ $t(23)=5.372$ ;  $p<.001$ ]; Speech and Language [ $t(23)=3.735$ ;  $p<.001$ ]; Interactive Social [ $t(23)=10.249$ ;  $p<.001$ ]; and overall in Global Scores [ $t(23)=10.445$ ;  $p<.001$ ].

### ***Association between maternal sensitivity and infant cooperation demographic variables***

According to table 3b, maternal sensitivity or infant cooperation are positively associated with maternal years of formal educational, paternal years of formal educational, family SES and gestational age and negatively associated with number of siblings. Maternal sensitivity, but not infant cooperation, was related to birth weight. Moreover, as seen in table 4b, maternal sensitivity and infant cooperation independent means varied among the different variables: (i) girls presented high means of infant cooperation than boys and their mothers expressed high means of maternal sensitivity with daughters than with sons; (ii) maternal sensitivity and infant cooperation increased when family attendance of nursing visits at Primary Health Care Center; (iii) when the pregnancy was planned maternal sensitivity and infant cooperation means were higher; (iv) maternal sensitivity and infant cooperation means increased if mother was employed; (v) when the baby was feed with cow's milk after the first 3 months of life against medical advice for economic reasons, maternal sensitivity and infant cooperation means decreased.

Taking out the two prematurely born infants from analyses the results concerning gestational age were similar.

Table 3b - Pearson Correlations between Maternal Sensitivity and Infant Cooperation and Infant or Family Factors

INFANT OR FAMILY FACTORS	MATERNAL SENSITIVITY	INFANT COOPERATION
Maternal years of formal education	.373**	.322**
Paternal years of formal education	.266*	.250*
Number of siblings	-.257*	-.326**
SES	.436**	.372**
Birth weight	.213*	.143
Gestational age	.319**	.227*

\*\* $p < .01$ ; \* $p < .05$

Table 4b - Maternal Sensitivity and Infant Cooperation differences according to Infant and Family Factors

INFANT AND FAMILY FACTORS	MATERNAL SENSITIVITY				INFANT COOPERATION				
		<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i>
Infant Gender	Girls	46	8.35	2.53	.939	46	8.39	2.41	.454*
	Boys	40	7.85	2.36		40	7.85	2.36	
Family attendance of nursing visits at Primary Health Care Center	Yes	43	7.58	2.28	-2.063***	43	7.88	2.20	-1.509***
	No	43	8.65	2.53		43	8.67	2.64	
Pregnancy	Planned	51	8.57	2.49	2.053*	51	8.57	2.56	1.375*
	Unplanned	34	7.47	2.30		34	7.82	2.26	
Maternal employment status	Employed	42	8.86	2.35	2.588*	42	8.88	2.47	1.882*
	Unemployed	18	7.14	2.36		18	7.61	2.20	
Feeding baby with cow's milk after the first 3 months of life against medical advice for economic reasons	Yes	17	6.29	2.51		17	6.82	2.60	
	No	69	8.57	2.23	3.665*	69	8.64	2.29	2.849*

\*\*\* $p < .001$ ; \*\* $p < .01$ ; \* $p < .05$

### ***Determinants of infant development, maternal sensitivity and infant cooperation***

A multiple regression analysis was performed to identify what variables, if any, were predictive of infant development (using global scores), maternal sensitivity and infant cooperation.

All factors previously associated with infant development (global scores with SGS II) were tested simultaneously, namely: maternal sensitivity, infant cooperation with mother in free play, infant number of siblings, maternal years of formal education, birth weight, gestational age, family attendance of nursing visits at Primary Health Care Center, and pregnancy health status (normal or at risk). Gestational age and family attendance of nursing visits at Primary Health Care Center were retained as possible determinants of infant global development (results presented in table 5b).

Table 5b - Predictors of Infant Development, Maternal Sensitivity and Infant Cooperation

Model	Un-standardized coefficients		Standardized coefficients		P<	95% Confidence interval for B	
	B	Std. Error	Beta	t		Lower bound	Upper bound
<b>INFANT GLOBAL SCORES IN SGS II</b>							
(Constant)	3.243	1.638		1.98	.05	-.019	6.505
- Family attendance of nursing visits at Primary Health Care Center	<b>.030</b>	<b>.012</b>	<b>.241</b>	<b>2.43</b>	<b>.05</b>	<b>.005</b>	<b>.055</b>
- Gestational age	<b>.098</b>	<b>.046</b>	<b>.236</b>	<b>2.14</b>	<b>.05</b>	<b>.007</b>	<b>.189</b>
- Infants fed with cow's milk after the first 3 months of life against medical advice	-.245	.157	-.171	-1.57	ns	-.557	.066
- Pregnancy at risk	-.187	.121	-.151	-1.55	ns	-.427	.054
- Number of siblings	-.070	.063	-.116	-1.10	ns	-.195	.056
- Maternal Sensitivity	.052	.051	.222	1.03	ns	-.049	.153
- Birth weight	4.782E-005	.000	.042	.41	ns	.000	.000
- Maternal years of formal education	.004	.015	.026	.24	ns	-.027	.034
- Infant Cooperation	-.007	.048	-.032	-.16	ns	-.104	.089
<b>MATERNAL SENSITIVITY</b>							
(Constant)	-7.002	4.209		-1.66	.10	-15.392	1.388
- Infant cooperation	<b>.799</b>	<b>.058</b>	<b>.799</b>	<b>13.83</b>	<b>.00</b>	<b>.684</b>	<b>.914</b>
- Gestational age	<b>.218</b>	<b>.107</b>	<b>.124</b>	<b>2.03</b>	<b>.05</b>	<b>.004</b>	<b>.432</b>
- Infants fed with cow's milk after the first 3 months of life against medical advice	<b>-.725</b>	<b>.368</b>	<b>-.119</b>	<b>-1.97</b>	<b>.05</b>	<b>-1.458</b>	<b>.009</b>
- Number of siblings	.177	.145	.069	1.22	ns	-.112	.467
- Paternal years of formal education	-.047	.049	-.079	-.95	ns	-.146	.051
- Maternal employment status	-.101	.126	-.052	-.80	ns	-.353	.150
- Family attendance of nursing visits at Primary Health Care Center	-.025	.031	-.046	-.80	ns	-.086	.037
- Infant global scores in SGS II	.206	.261	.049	.79	ns	-.315	.726
- Pregnancy at risk	-.218	.284	-.042	-.77	ns	-.783	.348
- SES	-.042	.065	-.075	-.65	ns	-.172	.088
- Birth weight	8.476E-5	.000	.018	.32	ns	.000	.001
- Maternal years of formal education	-.003	.055	-.006	-.06	ns	-.112	.105
<b>INFANT COOPERATION</b>							
(Constant)	6.383	4.549		1.40	.17	-2.688	15.454
- Maternal Sensitivity	<b>.924</b>	<b>.067</b>	<b>.924</b>	<b>13.72</b>	<b>.00</b>	<b>.790</b>	<b>1.059</b>
- Number of siblings	<b>-.325</b>	<b>.152</b>	<b>-.127</b>	<b>-2.14</b>	<b>.04</b>	<b>-.627</b>	<b>-.022</b>
- Pregnancy at risk	.419	.300	.080	1.39	ns	-.180	1.018
- Gestational age	-.134	.117	-.076	-1.14	ns	-.367	.099
- Infant gender	-.278	.273	-.057	-1.02	ns	-.822	.267
- Infants fed with cow's milk after the first 3 months of life against medical advice	.387	.401	.064	.97	ns	-.412	1.186
- Family attendance of nursing visits at Primary Health Care Center	.020	.033	.037	.60	ns	-.046	.085
- Maternal employment status	.071	.135	.036	.52	ns	-.199	.340
- Paternal years of formal education	.023	.053	.039	.44	ns	-.082	.129
- Maternal years of formal education	-.024	.059	-.042	-.41	ns	-.142	.093
- SES	-.019	.070	-.033	-.27	ns	-.158	.121
- Birth weight	-4.171E-5	.000	-.009	-.15	ns	-.001	.001
- Infant global scores in SGS II	-.010	.280	-.002	-.04	ns	-.568	.547

Since maternal sensitivity and infant cooperation were determinants of child development, we investigated possible determinants of these variables (tested independently). Analyses were conducted with factors previously associated with maternal sensitivity and infant cooperation namely: infant development, family SES, infant gender, number of siblings, birth weight, gestational age, family attendance of nursing visits at Primary Health Care Center, pregnancy planning; maternal employment status, maternal years of formal education, paternal years of formal education and infants fed with cow's milk after the first

3 months of life against medical advice for economic reasons. Maternal sensitivity and was determined by infants fed with cow's milk after the first 3 months of life against medical advice for economic reasons and gestational age; infant cooperation was determined by number of siblings (results presented in table 5b).

## **DISCUSSION**

The present study aimed to investigate the association between infant development assessed with Schedule of Growing Skills II (SGS II), and maternal sensitivity and infant cooperation assessed with CARE-Index about 12 months, in 86 mother-infant dyads.

### ***Infant development and infant-mother quality of interaction***

As we expected, improve infant developmental outcomes to be more likely in dyads with higher maternal sensitivity and infant cooperation. In this one trial study, a positive determinant link was found between infant development (Active Posture, Manipulative, Visual, Hearing and Language, Speech and Language, Interactive Social and Cognition and taking SGS II global scores) and maternal sensitivity.

Indeed the previous research indicates association between infant development and maternal sensitivity (Feldman et al., 2004; Leerkes et al., 2009). According to Vygotsky (1979), maternal interactive behavior plays an important role in scaffolding a child's emerging skills and new capacities. Past studies had already found that maternal sensitivity (although there are many approaches and definitions of maternal sensitivity) is associated with child latter outcomes (e.g., Bus et al., 1988; Greenberg et al., 1993 Leigh et al., 2011; Bernier et al., 2010; Leerkes et al., 2009; Tamis-LeMonda et al., 1996; Bigelow et al., 2010) and between infant development and infant cooperation. However, Locomotor and Self-care Social did not seem to be strongly associated. Maybe some domains are more affected by dyadic interactions and maternal contributions than others. Nevertheless, our study indicates that these associations can be found at the early age of 12 months.

### ***Biologic, family and social contributes for infant development***

As proposed by Bronfenbrenner et al., (1998), development results from multi-influences. Indeed, as we hypothesized, low levels of maternal education, and family economic problems, had a negative impact on infant development. Additionally, in our study, a range of factors besides maternal sensitivity were positively associated or related with infant development, namely: number of siblings, gestational age, birth weight, and pregnancy at risk. A novelty of our results was that we found feeding baby with cow's milk after the first

3 months of life against medical advice for economic reasons and attendance of nursing visits at Primary Health Care Center during pregnancy were linked with infant development. The second variable can be associated with better health care and parents' preparation for parenthood. Nevertheless, the variable feeding baby with cow's milk after the first 3 months of life against medical advice for economic reasons needs further research in order to understand if there is a direct neurological impact on infant development or thus this variable mirrors parents' economic problems.

Thus, biological factors (gestational age or pregnancy at risk e.g., gestational age and birth weight) together with social factors (e.g. SES) and family support affected infant development. Of course, each of these factors combines social and biological influences in a complex and intricate manner. For instance, low SES and pregnancy risk can not only affect infant health but also constitute a stress factors for parents. Maybe the support given in the nursing visits during pregnancy helped parents in these situations. In Portugal this nursing appointment, besides providing health care for infants, aims to offers orientation and anticipatory support for parents, in order to reassure parents and to promote parental competence.

#### ***Family and social contributes for mother-infant interaction***

Considering that both maternal sensitivity and infant cooperation were associated with infant development, we decided to investigate which factors influenced mothers' and infants' interactive behavior, and SES was a major influence. Previous studies performed in Portugal on mother-infant quality of interaction had already indicated that SES has an elevated impact on dyadic interactions (e.g., Fuertes et al., 2008). More than any other factor, SES affects infants and parents in direct and indirect ways. Sameroff et al. (1987) found that SES is highly linked with a set of environmental risk factors among which are maternal education, family support, stressful life events, maternal anxiety, parental representations, beliefs, and attitudes. Others have found that SES is related with infant health problems (Chen, Martin, & Matthews, 2006), worse health status at birth (Barros, & Nicolau, 2014) or premature birth (Fuertes et al., 2012). Moreover, longitudinal studies have shown that there is a negative and persistent effect of low SES on infants' social, emotional, and cognitive development (Sameroff et al., 1987). In our study, SES directly affected the dyadic interactive behavior. In turn, the parent-infant interactive behavior affected infant development. Thus, SES may have an indirect (e.g., maternal employment status; feeding baby with cow's milk after the first 3 months of life against medical advices for economic reasons; family attendance of nursing visits at Primary Health Care Center; number of siblings; maternal years of formal education) impact on development by affecting parent's sensitivity, which is necessary to take into consideration and to prevent.

We suggest that social government policies should be based on a multidimensional and integrated approach that privileges the provision of social care to families with young children through partnerships with local community leaders and other essential services that may constitute a supportive network for families. Several professionals (e.g. health, education, social), may play an important role in the early identification of families at risk and consequent referral to services/resources, ensuring that families have the necessary resources to satisfy their basic needs. In support of this suggestion, our study indicates that family needs and concerns with child care, finances and community services were related with mother-infant quality of interaction.

***Predictive factors of infant development and infant-mother quality of interaction***

From all variables studied only few predictive factors of infant development, maternal sensitivity and infant cooperation were found were retained in multiple regressions analyses (Figure 1a). Indeed, infant development was predicted by family attendance of nursing visits at Primary Health Care Center and gestational age whereas maternal sensitivity was predicted by infant cooperation, gestational age, infants fed with cow's milk against medical advice after the first 3 months of life and infant cooperation by maternal sensitivity and number of siblings. Therefore, in the light of Bioecological model (Bronfenbrenner et al., 1998; Bronfenbrenner, 2005) individual or factors related with infant (e.g., gestational age) and contextual factors (e.g., number of family attendance of nursing visits at Primary Health Care Center) predicted infant development whereas only contextual factors affected mothers' behavior. Finally, infant cooperative behavior was predicted by contextual factors (e.g., number of siblings).

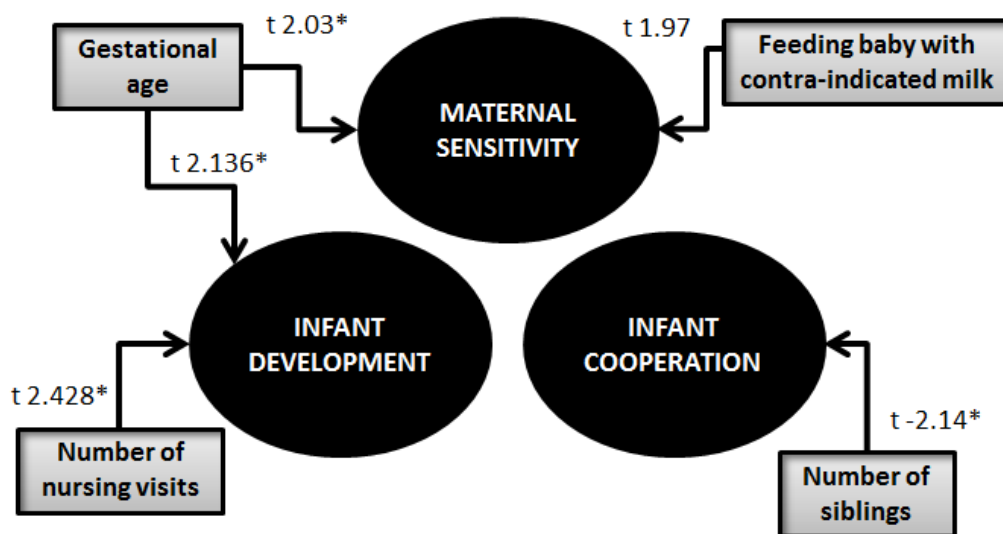


Figure 1a. Predictive factors of infant development, maternal sensitivity and infant cooperation.

The results for predictive factors were somewhat unexpected. Generally, gestational age is present as a possible risk factor for infant development and parent-infant relationships in prematurely born infants (e.g., Fuertes et al., 2009; Muller-Nix et al., 2004) but not for full-term infants. Intriguingly, in our study despite of only two infants had born with less than 36 weeks of gestation, gestational age affected infant development and maternal sensitivity. One possible explanation is that although gestational age in full-term samples is not usual risk factor maybe in the presence of other social and family risk factors, like in our sample (e.g. low maternal education), their significance can increase (Sameroff, & Fiese, 2010; Cicchetti, & Blender, 2006). Not only risk factors predicted our results, also protective factors played a key influence in our results like the number of nursing visits at Primary Health Care Center. We have little information on this subject. The role that those professionals and their practices have in diminishing the risk factors impact in Portugal needs further investigation.

As expected both maternal sensitivity and infant cooperation are related and each shape the other. However, in this study a variety of factors predicted maternal sensitivity and infant cooperation, suggestion that the independent use of both scales is not redundant. From a conceptual point of view, these scales were structured in a dyadic paradigm where

both make sense in context of each other. However, only using the term “maternal sensitivity” seems reductive, as it seems that infant contributions need to be considered.

### ***Limitations and future directions***

Although this investigation provides insight into maternal sensitivity and infant development at the early age of 12 months, it was limited in several ways. Despite of the careful methodological proceedings (e.g., four independent coders scored the data: two trained, reliable and blind against the study hypotheses scored the SGS II and two trained, reliable and blind against the study hypotheses scored the CARE-Index), one strong limitation of this research is that the study consisted of one single trial. Indeed, more trials, with infants' of different ages, could help to test the results obtained. Moreover, findings are correlational in nature and interpretations about causality are speculative. Nevertheless, we tried to collect a sample that represented the Portuguese society in terms of maternal education, family SES, religious and ethnic groups. Despite these limitations, this laboratorial study included variables with respect to the child, the family and the context on a multilevel approach of infant development. Given the uniqueness of Portuguese culture, it is our hope that our work provides cultural contribution to research on child development and parenting.

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## **CHAPTER VI - The impact of Touchpoints intervention on parental perception of the quality and promotion of the relationship with nurses**

In this chapter we present the study about the impact of the Touchpoints intervention on parental assessment of the relationship with the nurse who performs the child's health surveillance. This study is entitled: "The impact of Touchpoints intervention on parental perception of the quality and promotion of the relationship with nurses".

An article of this study is currently under progress to be submitted, in English language, to *Revista Latino Americana de Enfermagem*.

## ABSTRACT

**Aims:** To analyze the impact of Touchpoints (TP) intervention on parental perception of the relationship quality with nurses monitoring children's health.

**Method:** *Quasi-experimental* longitudinal study, including 126 mothers who were distributed for: *Group with Intervention (GI)*, *Group without Intervention (GWI)* and *Group without Intervention or Monitoring (GWIM)*. Paired samples, from GI and GWI and with the same routine visits, allowed comparing the impact of Touchpoints intervention on parental perception of the relationship quality with nurses monitoring their children's health. GWIM were randomly recruited and did not participate in the Touchpoints intervention; this group represented the regular population from the healthcare center. The instrument used was the Parent-Caregiver Relationship Scale - parents' version.

**Results:** Significant differences were found between the 3 groups with higher positive values in the GI in the three subscales of the scale. In factor 1 - Trust/Caring -, GI indicate highest average value ( $M=4.55$ ;  $DP=0.31$ ), followed by GWI ( $M=4.34$ ;  $DP=0.43$ ) and GWIM ( $M=4.04$ ;  $DP=0.30$ ); In factor 2 - Relational/Emotional -, GI ( $M=4.44$ ;  $DP=0.42$ ) presents an average value greater than GWI ( $M=4.11$ ;  $DP=0.58$ ) and GWIM ( $M=3.82$ ;  $DP=0.63$ ); in Factor 3 - Collaboration/Partnership - GWIM ( $M=4.06$ ;  $DP=0.47$ ) presents an average value lower than GI ( $M=4.44$ ;  $DP=0.42$ ) and GWI ( $M=4.35$ ;  $DP=0.56$ ).

**Conclusion:** The parental perception of their relationship with the nurse who carried their child health surveillance out improved significantly in the group where the TP nursing intervention occurred. Being the interpersonal relationship central to nursing care and a way in which any intervention is effective, the search for empathy in the interactions and the establishment of partnerships with parents/family is essential. The development and mobilization in clinical practice contexts of intervention methodologies that promote quality of this relationship, particularly the TP approach, could bring significant contributions not only in the future health of children but also to their families.

**Palavras-chave:** Relações Enfermeiro-Paciente; Confiança; Satisfação do paciente; Cuidados de Enfermagem; Comportamento Cooperativo

**Palabras clave:** Relaciones Enfermero-Paciente; Confianza; Satisfacción del Paciente; Atención de Enfermería; Conducta Cooperativa

**Keywords:** Nurse-Patient Relations; Trust; Patient Satisfaction; Nursing Care; Cooperative Behavior.

## Introduction

The family-centered care (FCC) is now widely known as the central orientation of pediatric nursing<sup>(1)</sup>. As with other European countries, in Portugal the High Commissioner for Health<sup>(2)</sup> considered the family-centered approach as the organization's guiding paradigm of pediatric services.

The components of nursing care centered on the child and her family (CCF), set out by Blake in 1954, confirmed the principles and guiding practices presented by the Institute for Patient and Family-Centered Care in 2011. These include: sharing with the family all relevant information; the dignity and respect for their beliefs, values, choices and perspectives; and family involvement in child care and in treatment decisions, considering its willingness as regards the limit this involvement<sup>(3)</sup>.

From these principles, two aspects are especially relevant. First, the belief that family, particularly parents, should be considered the children's primary caregivers, being potentially able to participate in the making of decisions related to their child. Second, the idea that the appropriate involvement of the family is only possible by establishing a partnership between the family and healthcare professionals, enabling information sharing and the adequacy of the partnership to the will and context of each family.

Research relating to the main components contributing to parental satisfaction and to the establishment of the relationship between healthcare professionals and family has indicated that parents mainly value:

- (i) *Trust*, which involves the belief that the person whom the individual trusts will act in your best interests, and integrates the areas of: technical; interpersonal; protection and loyalty (including authenticity and confidentiality)<sup>(4;5)</sup>.  
Trust is considered, by parents, as a priority and has been associated with higher levels of parental satisfaction<sup>(6)</sup>. In addition, confidence in health professionals has also been linked to higher levels of child and family well-being<sup>(7;8)</sup>, acceptance and treatment compliance<sup>(9-11)</sup> and parental involvement in the decision making about the children treatment<sup>(12)</sup>;
- (ii) *Empathy* and *respect*, involve attitudes of descentration from the own individual approach, neutrality and especially opening the understanding of reactions and parenting needs considering their beliefs and their contexts<sup>(13)</sup>. These attitudes have been identified not only as an important element of parental relationship with the health team, but also as a key adaptation<sup>(14-17)</sup>.
- (iii) *Collaboration* and *partnership*, which implies the parents' involvement in the planning and health care administration, informing them and contributing to

their training in child care. The nursing professional practice demands empathy in the interactions and establishment of partnerships with parents/family, being inherent to customers' satisfaction<sup>(18)</sup>. The partnership between parents and healthcare professionals has been linked to lower demand for emergency consultations, improvement of health indicators, higher levels of satisfaction and response to the child and family needs in situations of children with special health care needs<sup>(19-20)</sup>.

### **Touchpoints model: Contributions for Practice**

Healthcare professionals are the first ones that accompany the family and the baby, even before his/her birth. Preparing family for parenting must be a clinical concern<sup>(21)</sup>, especially in families whose risk factors are predictably added and can affect the quality of relationship between parents and children<sup>(22-23)</sup>.

On the basis of this intervention model is the Touchpoint (TP) concept corresponding to critical periods of development (e.g., as starting walking, toilet training...). During these periods, new skills emerge, replacing the previous ones, resulting in neurological reworking of settings and behavior reorganization having as a background the affective and social relationships. Thus, in the TP perspective, development is understood as a non-linear process with advances and setbacks, with periods of disorganization leading up to new and more elaborate organizations. On a preventive way, healthcare professionals can prepare parents for parenting, supporting and informing them about critical periods, promoting their self-confidence and establishing a relationship of trust (to create a partnership) with them. According to this model, the child, family and professionals gather efforts to transform the critical stages of development into positive transition periods<sup>(24-25)</sup>. So, in the context of TP model professionals can: i) inform parents about health aspects, education and development, ii) help them interpret the baby's efforts when he/she is trying to self-regulate and when is not well succeed regular, and iii) promote parents self-confidence on parenting role development.

In terms of theoretical/practical relation, the Touchpoints approach is a conceptual paradigm supported by the evidence at two levels: i) it is based on the evidence to define their assumptions; and ii) the application is tested by studies whose results forging its principles<sup>(26)</sup>. The investigation developed in this area<sup>(24)</sup> indicates that Touchpoints approach:

- allows, significantly, increase parental knowledge about child development with regard to the Touchpoints development theory and on relations within families;
- helps to improve parental performance;

- helps to improve parent-child relationship;
- is a moderator of parental stress and parental perceptions about their children behavior;
- has an indirect but positive effect on child development;
- has a positive impact on mothers mental health;
- and increases the latency of breastfeeding.

In Portugal, there is a scarcity of studies about assessing the effectiveness of the Touchpoints approach when applied by nurses and evaluation the perception of the families about the quality of the relationship developed with the nurse who carries out health surveillance of their children, especially when using specific techniques and/or methodological innovative approaches. Considering this lack of studies and recognizing that the quality of the relationship may interfere with parental satisfaction and the quality of nursing care provided, the objectives of this study are:

- To study the impact of Touchpoints intervention in the mothers' evaluation about their relationship with the nurse who carries out health surveillance of their children.
- To compare the perception of mothers about their relationship with the nurse who carries out health surveillance of their children in groups with and without Touchpoints intervention.

## **Methods**

This study embraced a quasi-experimental and longitudinal approach.

### *Participants*

The Parent-Caregiver Relationship Scale - parents' version was applied to a total sample of 126 mothers of children 2 years and consisted by three groups: *Group with Intervention* (GI) ( $n=43$ ), *Group without Intervention* (GWI) ( $n=43$ ) *Group without Intervention or Monitoring* (GWIM) ( $n=40$ ).

The subjects of GI and GWI were participants in a longitudinal and *quasi-experimental* study developed in order to test the efficacy of TP methodology. The monitoring of the two groups took place in a period between 11 and 24 months of life of children (4 moments of assessment), being held two TP sessions in GI at 12 and 18 months. These groups belonged to paired samples according to the following criteria: maternal age; socio-economic class; family structure; child health; physical or psychological health of parents; twins; nationality of the family; risk during pregnancy; baby APGAR. Table 1c presents the characterization of the sample corresponding to GI and GWI.

Table 1c – Sample characterization of the Group with Intervention and Group without Intervention according to age, socioeconomic status, education and employment situation. Angra do Heroísmo, Azores, Portugal, 2013

	<b>Group with Intervention</b> <b>N=43</b>		<b>Group without Intervention</b> <b>N=43</b>	
<b>Age</b>				
	<i>M</i>	30.56		30.60
	<i>DP</i>	6.39		6.44
	Range	18-48		21-42
<b>Socio economic status</b>	<b><i>n</i></b>	<b>%</b>	<b><i>n</i></b>	<b>%</b>
Low-income	6	14	5	11.6
Lower middle-class	17	39.5	13	30.2
Middle Class	14	32.6	13	30.2
Upper Middle Class	3	7	7	16.3
Upper Class	3	7	5	11.6
<b>Formal education</b>	<b><i>n</i></b>	<b>%</b>	<b><i>n</i></b>	<b>%</b>
Up to four years ( <i>first grade of basic school</i> )	2	4.7	4	9.3
5 to 6 years ( <i>second grade of basic school</i> )	9	20.9	6	14.0
7 to 9 years ( <i>third grade of basic school</i> )	11	25.6	13	30.2
10 to 12 years ( <i>secondary school level</i> )	12	27.9	6	14.0
More than 12 years ( <i>completed a College/University degree</i> )	8	18.6	14	32.6
Master	1	2.3	0	0
<b>Employment status</b>	<b><i>n</i></b>	<b>%</b>	<b><i>n</i></b>	<b>%</b>
Employed	29	67.4	39	90.7
Unemployed	14	32.6	4	9.3

The participants of GWIM were mothers of children within the age group of 2 years, with mean age equivalent to 33 years ( $SD=6.7$ ), having been randomly and systematically recruited, over four months, with the aim of describing target population to the same health care center where the study took place regarding the TP methodology. Touchpoints methodology includes 8 guiding principles (Table 2c).

Table 2c – Touchpoints’ principles<sup>(25)</sup>

Principles	Description
- <i>Recognize what you bring to the interaction</i>	Professional influence and is influenced by the families, his behaviors and emotions elicit his reactions and feelings. He should develop a “third ear” that helps him to develop self-reflection and maturity.
- <i>Look for opportunities to support mastery</i>	Professional highlights parent’s competence and self-esteem for example through observations of the child development progress and parental skills.
- <i>Use the behavior of the child as your language</i>	Child brings together the professional and the parents and both can see what the child’s does. His behavior is the means by which they work together and tells to the professional where he must go next.
- <i>Value disorganization and vulnerability as an opportunity</i>	Development is characterized by periods of normal disorganization that affect other infant systems and, simultaneously, family system. The professional use this opportunity to help parents to understand that disorganization means an anticipation of infant development progression.
- <i>Value and understand the relationship between you and the parent</i>	Professional enters to the family system so, he must reflect about what he represents to the family, how is distributed the power in the relationship, the professional is only an expert or also a partner?
- <i>Be willing to discuss matters that go beyond your traditional role</i>	Professional needs to open up their experience as a human being in relation to the families he works with to be truly effective in supporting a family’s overall well-being
- <i>Focus on the parent-child relationship</i>	The baby’s demands elicit expectations and responses from parents based on their own infancy and present relationships experiences. So, observe and understanding the relationship and interaction between parent and child is one of the best tools to work with the family.
- <i>Value passion wherever you find it</i>	The passion of parents for children is energy, both, negative and positive that moves in the parenting process with all its challenges and joys inherent in creating and caring for a child. Therefore, the professional must find that passion and facilitate “falling in love” between parents and children.

Promoting children’s health and parental competences is of foremost relevance and anticipatory care is paramount. The succession of touchpoints in a child development is like a map that can be identified and anticipated by both: parents and providers. They are much more focused on care provision of topics of parents’ interest (e.g., food, discipline) than in traditional milestones (e.g., smile, grasp, sit, crawl, walk). Negotiations with the child in connection with these touchpoints can be seen as a source of satisfaction and

encouragement for the family system. Prior knowledge of these touchpoints and strategies to deal with them can help reduce the negative interaction that otherwise could harm the child development course and result in problems in different areas (e.g., sleep, food and toilet training<sup>(24-26)</sup>).

## **Instruments**

### *Medical and Familial Demographic Information*

Mothers were interviewed about their infant's medical status and familial demographics. In Portugal, all parents have their children's medical record since birth – “the Baby health book”. We requested permission to collect data from this book. Medical and demographic factors included the infant's delivery method, APGAR score at 1 and 5-minute, gestational age at delivery, birth growth measurements (weight, length, head circumference), gender, parity, health status at delivery, prenatal health care (number/frequency of medical consultations), *pregnancy health status (normal or at risk)*, and infant health conditions (identification, frequency and severity). Mothers reported the family attendance of medical and nursing visits at Primary Health Care Center (during pregnancy and after the infant's delivery) and frequency of these visits, family socioeconomic status, parents' years of completed education, age, employment status, marital status, the infant's diet history (including the introduction of cow's milk in the infant's diet), number of siblings and infant health status during the first year of life.

### *Parent-Caregiver Relationship Scale*

The Parent-Caregiver Relationship Scale (PCRS) is an assessment measure of the quality of the relationship perceived between parents and professionals' child caregivers<sup>(27)</sup>. In its original version the scale comprises three subscales “Trust”; “Colaboration” e “Affiliation”, The score is indicated on a *Likert* scale of 5 points from 1 (*Strongly disagree*) to 5 (*Strongly agree*) and showed overall internal consistency (Cronbach's alpha) between .75 and .90. Within the doctoral process, that is integrated into the present study PCRS, and it was adapted for the Portuguese population and nursing care<sup>(28)</sup>.

After authorization of the authors, the original version of the scale was subjected to a process of translation, retroversion and cross-cultural adaptation as defined by Eremenco, Cella & Arnold<sup>(29)</sup>. For the analysis of the scale construct validity was made an exploratory factor analysis using the analysis methodology of principal components with orthogonal transformation *varimax* (from SPSS). The calculation of internal consistency/reliability was

done by calculating the Cronbach's alpha coefficient. To analyze the fidelity of the items the correlation between the items in each subscale and its sub-total was conducted.

The Portuguese version confirms the existence of 3 factors (sub-scales) of the original version although it has some differences in the constitution of each one of these subscales. The explained reliability is 54.8% and the internal reliability values are: Factor 1 - Trust/Caring ( $\alpha=0.94$ ); Factor 2- Relational/Emotional ( $\alpha=0.87$ ); Factor 3- Collaboration/Partnership ( $\alpha=0.77$ ).

The fidelity of the items was further analyzed by calculating the correlation between each of the items that comprise each of the subscales (corresponding to the three factors found) and the total of the same subscale. It was showed correlations (Kendall<sup>2</sup>) highly significant ( $\alpha=0.01$ ) between the different items that comprise the sub-scales and the corresponding subscales.

The subscale Trust/Caring relates to the trust, including the assignment of technical skills, communicational and relational skills, and the values of loyalty and protection. The subscale Relational/Emotional translates the relational quality and aspects of interrelation and professional availability for respond to parental needs.

The subscale Collaboration/Partnership concerns to the quality of the collaboration, the involvement in the discussion of children's issues, and partnership with regard to their health and also the values of loyalty and respect for parental privacy.

#### *Data collection and ethical procedures*

In order to ensure the person's rights, from an ethical point of view, we requested and obtained permission from the authors of the scale, the healthcare institution (Primary Health Care Center's director) and study participants. Especially, it was guaranteed anonymity and confidentiality of data and provided essential information about the study to the participants. They agreed to participate in the study signing a free and informed consent. After the scale has been presented to the participants by nurses, it proceeded to its application giving it a code and asking the mothers to fill it. The scale was filled in private and then placed, by participating, in a sealed box.

The Scale application to mothers who participated in the research study on the Touchpoints approach took place from April to August 2013, in the *GWIM*, held from September 2013 to December 2013.

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<sup>2</sup> In case of using the Spearman correlation coefficient all correlations would remain highly significant.

## Results

### *Evaluation of perception of the relationship quality*

We intend to evaluate the differences of perception of quality of relationship between mothers and nurses in three study groups: GI, GWI (without intervention but paired), GWIM (without intervention and randomly selected). In general, as can be seen in Table 3c, the three groups present high average values showing that mothers evaluate positively their relationship with the nurse. The dimension with lower average is the relational/emotional.

Table 3c – Differences between experimental groups according to mean values of Scale global score and subscales scores. Angra do Heroísmo, Azores, Portugal, 2013

		Total sample (n=126)	Group with Intervention (n=43)	Group without Intervention (n=43)	Group without Intervention or Monitoring (n=40)	<i>F</i>	<i>P</i>
<b>Trust/ Caring</b>						17.106	<b>&lt;.01</b>
	M	4.42	4.63	4.46	4.15		
	DP	.42	.32	.43	.37		
<b>Relational/ Emotional</b>						13.066	<b>&lt;.01</b>
	M	4.13	4.44	4.11	3.82		
	DP	.60	.42	.58	.63		
<b>Colaboration/ Partnership</b>						6.905	<b>&lt;.01</b>
	M	4.29	4.44	4.35	4.06		
	DP	.51	.42	0.56	.47		
<b>Global</b>						21.880	<b>&lt;.01</b>
	M	4.32	4.55	4.34	4.04		
	DP	.40	.31	.43	.30		

Comparing the three groups and according to global score, were verified statistically significant differences between groups ( $F(2.123)=21.88$ ;  $p<0.01$ ), whether in relation to the three scales respectively: factor 1 ( $F(2.123)=17.11$ ;  $p<0.01$ ), factor 2 ( $F(2.123)=13.07$ ;  $p<0.01$ ) and factor 3 ( $F(2.123)=6.91$ ;  $p<0.01$ ).

According to the multiple comparison test of Tukey, it appears that differences in the average score on the global scale are between all groups. GI presents the highest mean value ( $M=4.55$ ;  $DP=0.31$ ), following GWI ( $M=4.34$ ;  $DP=0.43$ ) and GWIM ( $M=4.04$ ;  $DP=0.30$ ).

Regarding the factor 1 (subscale "Trust/Caring") statistically significant differences ( $\alpha=0.05$ ) are situated between the GWIM and the other two groups. GWIM ( $M=4.15$ ;  $DP=0.37$ ) presents a mean value lower than GI ( $M=4.63$ ;  $DP=0.32$ ) and GWI ( $M=4.46$ ;  $DP=0.43$ ).

Regarding the factor 2 (subscale "Relational/Emotional") the differences are situated between the Group with Intervention and the other two groups. GI ( $M=4.44$ ;  $DP=0.42$ ) presents a mean value higher than GWI ( $M=4.11$ ;  $DP=0.58$ ) and GWIM ( $M=3.82$ ;  $DP=0.63$ ). Closed to the threshold significance ( $\alpha=0.05$ ) lies the p-value associated with the test to the difference between GWI e o GWIM (I.C a 95% ]-0,051; -0,0005[;  $p=0,051$ ).

Finally, regarding factor 3 (subscale "Colaboration/Partnership") differences are found between GWIM and the others two groups. GWIM ( $M=4.06$ ;  $DP=0.47$ ) presents a mean value lower than GI ( $M=4.44$ ;  $DP=0.42$ ) and GWI ( $M=4.35$ ;  $DP=0.56$ ).

Comparing the three groups were verified, in global scale, statistically significant differences between groups [ $F(2.123)=21.88$ ;  $p<.01$ ], whether in relation to the three subscales respectively [ $F(2.123)=17.11$ ;  $p<.01$ ]; [ $F(2.123)=13.07$ ;  $p<.01$ ]; and [ $F(2.123)=6.91$ ;  $p<.01$ ].

## Discussion

The aim of this study is to compare the mothers' perceptions about the quality of relationship with the nurse who carries out health surveillance of his/her child towards TP intervention in three study groups: GI (with intervention); GWI (without intervention but in-paired); GWIM (without intervention or monitoring and randomly selected). The findings show the existence of differences in statistical significance between the groups indicating that TP intervention contributes, in this sample, for a more positive representation and greater trust by mothers about their relationship with the nurses (in this case female nurses).

These results are consistent with the findings of other studies<sup>(21-24)</sup> whose results embrace the TP principles and reinforce the idea that the application of this methodology contributes significantly to improving the quality of the parent-nurses (in the parents' perspective). In fact, the theoretical framework that underpins the TP methodology, in particular, the relational paradigm, comprise the different dimensions that comprise the interpersonal relationship (trust/caring, relational/emotional and collaboration/partnership) and interfere positively in the quality of that relationship. Firstly, it is noted that the relational/emotional dimension is higher in GI comparing to GWI and GWIM. From the

perspective of the TP approach, the relational dimension is crucial because it is transversal to whole nursing care and through which the intervention is accomplished. The dimensions Collaboration/Partnership and Trust/Caring; GI obtained better results than the GWIM but do not get better results than the GWI.

We speculate that the low differences between GI and the GWI can be explained by the fact that the visits monitoring programs within the experimental program were carried out by the same nurses trained in TP methodology. Despite the fact that they were carried out structured TP sessions only in GI, we believe that technical training in this methodology substantially interfere in job performance and how the professional establishes the relationship with families. From the moment that a professional “gets in touch”, he/she embodies the philosophy behind this methodology and dominates the theoretical basis that underpins it. This may result in restructuring/transforming the professional identity, that is reflected in the way of relating with him/herself and with others. Therefore, we believe that in future studies on parental satisfaction with this methodology, the *GW* should not have contact with professionals trained in TP.

### **Conclusion:**

The TP intervention with trained nursing professionals can constitute a useful intervention model for the relationship establishment and based on the principles of performance that go beyond the proper domain of the methodology.

The parental perception of their relationship with the nurse who carries out his/her child health surveillance improved significantly in the group where there was TP nursing intervention. Being the interpersonal relationship central to nursing care and a way by which any intervention is effective, the search for empathy in the interactions and the establishment of partnerships with parents/family is essential. In clinical practice contexts, the development and mobilization of intervention methodologies that promote quality of this relationship, particularly the TP approach, could bring significant contributions not only in the future health of children but also their families.

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## **CHAPTER VII – “Touchpoints’ by nurses: impact on maternal representations, child development and mother-infant interaction quality”**

In this chapter, we present the main findings of a comparative study of the two groups (the Group with Intervention and the Group without intervention) considering the impact of Touchpoints methodology on mother-infant quality of interaction, infant development and maternal representations of child temperament.

The study is entitled: “Touchpoints’ by nurses: impact on maternal representations, child development and mother-infant interaction quality”.

We are aiming at submitting an article based on this study. This work is currently in progress. Thus, this chapter embraces a diverse structure when compared to the previous ones, aiming at answering a main question: Does the intervention using Touchpoints help in enhancing young children development and in supporting their families?

## **Does the Intervention with Touchpoints methodology help in enhancing young children development, mother-infant quality of interaction and perceptions towards nurses?**

In this study, we investigate the effect of implementing the TP methodology in the following variables: mother-infant quality of interaction, infant development and maternal representations of child temperament. Hence, two research questions were posed: (i) Does the intervention with TP methodology enhance young children development? and (ii) Does the intervention with TP methodology enhance the quality of mother-infant interaction?

### **Methods**

The findings presented in this chapter in order to answer the abovementioned questions and objectives were obtained by conducting a quasi-experimental and longitudinal study, in which two groups of dyads compounded by mothers and their infants were studied.

### **Participants**

Eighty six mothers and their infants were participants in this quasi-experimental study, which embraces a longitudinal approach. This number of participants is equally distributed in the *Group with Intervention* (GI) ( $n=43$ ) and *Group without Intervention* (GWI) ( $n=43$ ). The monitoring of the two groups took place in a period between 11 and 24 months of life of children (4 moments of assessment), being held two TP sessions in GI at 12 and 18 months. These groups belonged to paired samples according to the following criteria: maternal age; socio-economic class; family structure; child health; physical or psychological health of parents; twins; nationality of the family; risk during pregnancy; baby APGAR. Table 1d presents the characterization of the sample corresponding to GI and GWI.

Two Touchpoints interventions sessions were applied in the Group with Intervention as follows: the first time, at 12 months; the second time, at 18 months, child age. Each group was composed by 43 mother-infant dyads; nevertheless, analyses were performed with only 42 dyads in the intervention groups since one case was not possible to fully apply the TP intervention.

Table 1d – Sample characterization of the Group with Intervention and Group without Intervention according to age, socioeconomic status, education and employment situation. Angra do Heroísmo, Azores, Portugal, 2013

	<b>Group with Intervention N=42</b>		<b>Group without Intervention N=43</b>	
<b>Age</b>				
	<i>M</i>	30.52		30.60
	<i>DP</i>	6.45		6.44
	Range	18-48		21-42
<b>Socio economic status</b>	<i>n</i>	%	<i>n</i>	%
Less Favoured Class	6	14.3	5	11.6
Lower Class	17	40.5	13	30.2
Middle Class	13	31.0	13	30.2
Upper Middle Class	3	7.1	7	16.3
Upper Class	3	7.1	5	11.6
<b>Formal education</b>	<i>n</i>	%	<i>n</i>	%
Up to four years (first grade of basic school)	2	4.8	4	9.3
5 to 6 years (second grade of basic school)	9	21.4	6	14.0
7 to 9 years (third grade of basic school)	11	26.2	13	30.2
10 to 12 years (secondary school level)	12	28.6	6	14.0
More than 12 years (completed a College/University degree)	7	16.7	14	32.6
Master	1	2.4	0	0
<b>Employment status</b>	<i>n</i>	%	<i>n</i>	%
Employed	29	69	39	90.7
Unemployed	13	31	4	9.3

The participants of GWIM were mothers of children within the age group of 2 years, with mean age equivalent to 33 years ( $SD=6.7$ ). These dyads of mothers-children were randomly and systematically recruited, over a four months period, with the aim of describing target population to the same health care center where the study took place regarding the TP methodology. Two equivalent groups were generated: the Group with Intervention (GI) and the Group without Intervention (GWI). These groups belong to paired samples constructed according with the criteria of pairing presented in Table 2d.

Table 2d - The criteria of pairing

<b>THE CRITERIA OF PAIRING</b>
- Maternal age $\leq$ 20 years old
- Maternal age between 21-34 years old
- Maternal age $\geq$ 35 years old
- Middle class <i>versus</i> poverty
- Mother one parent <i>versus</i> live with both parents
- Healthy child without hospitalization <i>versus</i> hospitalization $\geq$ 5 days
- Physical illness or psychological parent <i>versus</i> never needed psychiatric consultation
- Twins
- Portuguese families or immigrants
- Pregnancy without risk <i>versus</i> risk
- Resuscitated baby or APGAR below 7 points in the first 5 minutes <i>versus</i> baby or not resuscitated APGAR above 7 points in the first 5 minutes

### **Instruments for data collection**

#### *Infant Development*

In this study, infant development was assessed with Schedule of Growing Skills II (SGS II) at 11 months. The SGS II (Bellman et al., 1996) is a developmental screening tool used to assess the developmental trajectories of children from birth to five years of age and is based on the Sheridan developmental sequences, published in 1975 (Sheridan, 1997) and Griffiths Mental Developmental Scales published in 1967 and revised in 1984 (Bellman et al., 1996). It comprises ten different skill areas: Passive Posture, Active Posture, Locomotor, Manipulative, Visual, Hearing and Language, Speech and Language, Interactive Social, Self-care Social and Cognition. The SGS II allows us to obtain the developmental age and the coefficient of development, both in general and in each distinct area of development.

Two independent trained coders, reliable and blind against the study hypotheses scored the SGS II.

The degree of reliability and validity of the SGS II had been tested previously, showing excellent scores (Cronbach, between .88 and .97, Bellman et al., 1996). These scores were obtained without using the subscale of Passive Posture, as it is only applied for babies under 6 months of age, which is not the case in our study.

### *Maternal and Infant Interactive Behavior*

At the 12-months lab visits, mothers were videotaped during social interaction with their infants according to the instructions given in the CARE-Index manual (Crittenden, 2003) that is each dyad played alone about five minutes (3 minutes minimum). Mothers were asked to play with the infant as they typically would do at home. A standard set of age-appropriate toys was provided for the dyad, arranged on a blanket on the floor of the play room.

Scoring of maternal and infant behavior from the videotaped free play sessions was accomplished using the CARE-Index (Crittenden, 2003). The CARE-Index assesses three dimensions of parents' interactive behavior with their infant (Sensitive, Controlling/Intrusive, and Unresponsive), and four dimensions of the infant's interactive behavior with parents (Cooperative, Compulsive-Compliant, Difficult and Passive). As required by Crittenden (2003), the coder scored parental and infant behavior independently. However, coders should make a dyadic decision to assess parents' and infants' behavior (Is the mother behavior sensitive in the context of infant behavior, infant age and play interaction?). Indeed, the behavior of each partner was coded from the perspective of the other partner (i.e., the coder scores each partner taking into account the behavior of the other partner). For instance, if the mother smiles while the infant is distressed, the mother's behavior is considered insensitive, whereas, if the mother smiles in response to the infant's smile or attentive face, the mother's behavior is considered sensitive. Note that, although the term "maternal sensitivity" often refers to an individual characteristic, in this scale it is operationalized as a dyadic construct. After scoring, researchers did use independent scores of maternal sensitivity and infant cooperative behavior or compute the mean of both scores as a dyadic score. Generally, maternal sensitivity and infant cooperative behavior are presented as independent scores (Fuentes et al., 2009; Muller-Nix et al., 2004). As in our study we aim at understanding maternal and infant contributions independently (even on a dyadic perspective), independent scores will be presented.

Two trained coders scored the CARE-Index. The primary coder was trained to reliability by Crittenden prior to scoring the videotaped protocols in this study and was masked to

the study's hypotheses and background variables. All cases were scored independently by the two coders. All disagreements in the classification were resolved in conference.

To assess inter-coder reliability, a third trained coder (masked to background variables and the study's hypotheses), re-scored a subset of 20 videotapes. Inter-coder reliability for all three trainers was excellent (the intra-class correlations among the first two coders for mothers' Sensitivity and Infant Cooperative behavior were .94 and .89 respectively, and the ratings for the three coders, taking the final scores achieved by the two coders and the score of the third coder, were .91 and .86 respectively).

## Main findings and discussion

### Differences in Infant Development between the Group with Intervention and the Group without Touchpoints intervention

First, we found little direct relations between "having touchpoints intervention" and infant development outcomes and mother-infant relationships. In fact, according to Kruskal-Wallis non-parametric analyses only infant *Locomotor* development improved in the GI ( $p=.036$ ). No significant results were found for *Active Posture, Manipulative, Visual, Hearing and Language, Speech and Language, Interactive Social, Self-care Social* and *Cognition*. With the exception of improvement in Locomotor development, the intervention Touchpoints did not interfere on infant development (Table 3d).

Table 3d - Results of comparative study of the dependent variable on child development in GI and GWI at 24 months

Variables	Kruskal-Wallis test Sig.
Locomotor	<b>.036</b>
Manipulative	.762
Visual	.148
Hearing and Language	.509
Speech and Language	.221
Interactive Social	.311
Self-care Social	.940
Cognition	.430
Global score	.105

Thus, in general, Touchpoints intervention didn't have great impact on child development except in children at risk for Locomotor area that involves walking and exploring in which the intervention had focused.

**Differences in maternal representations about the child and motherhood between the Group with Intervention and the Group without Touchpoints intervention**

With regard to maternal representations about the child and motherhood, different mean values ANOVA indicate that the mean of the maternal representations enhance in the GI ( $Z=5.737$ ;  $p=.019$ ). Thus, and comparing to mothers from the Group without Intervention, after TP intervention, mothers of the intervention group tend to value the child temperament as being easier. Also, tend to consider easier dealing and taking care of the child.

**Differences in Maternal Sensitivity and Infant Cooperative Behavior between the Group with Intervention and the Group without Touchpoints Intervention**

When we compare the results of maternal sensitivity in the GI and GWI at 24 months, no significant differences are found. The absence of differences between both groups does not mean that there is no effect of TP intervention. One must note that before the intervention the maternal sensitivity was fairly higher in the GWI ( $M=8.62$ ) than in the GI ( $M=7.62$ ) [ $t(41)=-2.049$ ;  $p<.05$ ]. Maternal sensitivity significantly increases in the GI from 12 to 24 [ $t(41)=4.513$ ;  $p<.001$ ] whereas the same effect was non founded in the GWI (from 8.62 at 12 months to 8.40 at 24 months). Indeed, maternal sensitivity in GWI decreases from 12 to 24 months (Table 4d).

Table 4d - Means and standard deviation of maternal sensitivity with child in GI and GWI at 12 and 24 months.

Groups		Maternal sensitivity with child at 12 months	Maternal sensitivity with child at 24 months
<b>Group with Intervention (GI)</b>	<i>M</i>	7.62	8.81
	<i>N</i>	43	42
	<i>SD</i>	2.410	2.778
<b>Group without Intervention (GWI)</b>	<i>M</i>	8.62	8.40
	<i>N</i>	43	43
	<i>SD</i>	2.415	2.611
<b>Total</b>	<i>M</i>	8.12	8.60
	<i>N</i>	86	85
	<i>SD</i>	2.450	2.687

Likewise, scores of infant cooperative behavior significantly increases from 12 to 24 in the GI [ $t(42)=2.210$ ;  $p<.05$ ] but not in GWI (for means and standard deviation see Table 5d).

Table 5d – Means and standard deviation of child cooperative behavior with mother in GI and GWI at 12 and 24 months.

Groups		Child cooperative behavior with mother at 12 months	Child cooperative behavior with mother at 24 months
<b>Group with Intervention (GI)</b>	M	7.77	8.60
	N	43	42
	SD	2.419	2.996
<b>Group without Intervention (GWI)</b>	M	8.79	8.56
	N	43	43
	SD	2.396	2.684
<b>Total</b>	M	8.28	8.58
	N	86	85
	SD	2.448	2.826

Thus, when we compared only final scores of child cooperative behavior at 24 months we need to consider their differences before the intervention. Indeed, maternal sensitivity is fairly higher in the Group without Intervention than in the Group with Intervention at 12 months (before the intervention). This can be a possible explanation for the lack of significant differences in the final comparison because the starting point in the Group without Intervention was much lower.

### **Perceptions of Trust/Caring, Collaboration/Partnership and Relational/Emotional towards nurses**

Overall, only the means of mothers perceptions of Trust/Caring towards professionals, i.e., nurses [ $t(84)=2.146$ ;  $p<.001$ ;  $M_{GI}=34.07$ ,  $SD=3.71$ ;  $M_{GWI}=31.79$ ], Collaboration/Partnership [ $t(84)=2.817$ ;  $p<.001$ ;  $M_{GI}=62.79$ ,  $SD=4.809$ ;  $M_{GWI}=59.89$ ,  $SD=6.538$ ] and Relational/Emotional [ $t(84)= 2.334$ ;  $p<.001$ ;  $M_{GI}=60.53$ ,  $SD=3.838$ ;  $M_{GWI}=58.30$ ,  $SD=5.638$ ] in the intervention group were higher in the GI than in the non-intervention group after six months of the Touchpoints intervention.

## The impact of TP methodology among children with potential development risks

Our sample included children with potential risks in children development, namely: maternal age, poverty, child hospitalization, physical illness or psychological parent, pregnancy in risk, Resuscitated baby or APGAR below 7 points in the first 5 minutes. The following results refer to this specific sub-group of children with potential risks.

By testing the mean differences in maternal interactive behavior, infant interactive behavior and infant development between intervention and non-intervention groups, it seems that Touchpoints intervention has little impact in the outcomes. However, when we considered potential risks for children development new results arise.

Using a multivariate linear model, results became clearer when the presence of biological and environmental risk for children development is taking in account. Thus, when we compare children at risk for developmental problems in the intervention and non-intervention groups, we found that after the intervention:

- In the Group with Intervention, according to Schedule of Growing Skills II, children at risk improved their development in *Speech and Language* ( $Z=4.772$ ;  $p<.05$ ;  $M_{GI}$  at risk =13.64  $SD=.30$  vs.  $M_{GWI}$  at risk=13.00,  $SD=.29$ ) and in *Hearing and Language* ( $Z=4.341$ ;  $p<.05$ ;  $M_{GI}$  at risk=15.08,  $SD=.37$  vs  $M_{GWI}$  at risk=14.0,  $SD=.36$ ); and in *Self-care Social* ( $Z=4.0$ ;  $p<.05$  vs  $M_{GI}$  at risk=11.96,  $SD=.35$ ;  $M_{GWI}$  at risk=11.46,  $SD=.34$ ) when compared to the children in the Group without Intervention and who were not at risk in their development;
- Better results were found for maternal sensitivity ( $Z=3.884$ ;  $p<.05$ ;  $M_{GI}$  at risk=24.18,  $SD=6.52$  vs  $M_{GWI}$  at risk=22.91,  $SD=5.85$ ) and infant cooperative behavior ( $Z=5.663$ ;  $p<.05$ ;  $M_{GI}$  at risk=22.09  $SD=7.51$ ;  $M_{GWI}$  at risk=20.78,  $SD=6.80$ ) in free play after Touchpoints intervention in dyads with children at risk for developmental problems.

In sum, it seems that intervention benefited more children at risk than other children. This occurred particularly for dimensions such as: perceptions of Trust/Caring towards professionals (nurses); maternal sensitivity; infant cooperative behavior; maternal representations about the child and motherhood and; infant development. Therefore, we may assume that the Touchpoints intervention is more beneficial for children that needed it more.

## **Main conclusions**

Based on this study and considering its main findings, we conclude that the intervention using TP methodology by nurses had a positive effect on the following dimensions: infant development; maternal representations about the child and motherhood; maternal sensitivity and infant cooperative behavior; perceptions of Trust/Caring towards professionals, i.e. nurses. This was particularly significant among children who were identified as having potential development risks, such as maternal age, poverty, child hospitalization, physical illness or psychological parent, pregnancy in risk, Resuscitated baby or APGAR below 7 points in the first 5 minutes. Although we can assume that the Touchpoints intervention is more beneficial for children that needed it more, further research is needed to better explain these findings.

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## **CHAPTER VIII - “Touchpoints”: parents and nurses’ perceptions and satisfaction**

In this chapter the study entitled “Touchpoints”: parents and nurses’ perceptions and satisfaction” is presented. This study was developed to understand the experience and meaning given by parents of children between, from 11 to 24 months, and nurses of participating in the implementation of Touchpoints methodology.

In 2015, an article of this study was submitted and accepted for publication, in English language, by the *Journal Da Investigação às Práticas: Estudos de Natureza Educacional*.

## **Abstract**

Support provided to families experiencing parenting should be based on a trust relationship between nurses and parents. Satisfaction experienced with the process of care, both by parents and nurses, assumes great relevance and can be considered as an outcome of nursing care. Purpose: To understand the experience and meaning given by parents and nurses of participating in the implementation of an innovative nursing intervention, with Touchpoints (TP) methodology, of parents of children, from 11 to 24 months, and of nurses. Study Design and Methods: Qualitative study using a phenomenological approach. Data collection was performed using (i) field-notes (FN) written by the nurses who implemented the TP methodology and (ii) focus groups (FG) with 10 parents of children from the intervention group. Results: Parents considered that the TP sessions implemented by nurses contributed to: Acquisition of knowledge and skills; Validation of parental practices; Improvement of child behavior; Parental confidence; Interpersonal relationship; Professional competences; Specific competences; Satisfaction. Participant nurses perceived that the TP methodology contributed to: Mobilization and application of TP principles; Learning process; Parents' interest; Feelings/emotions; Satisfaction. Clinical Implications: Nurses caring for families should implement innovative methodologies that facilitate adaptation to parenting, such as Touchpoints. Implementing the TP methodology contributed to parents' and nurses' satisfaction.

Key words: Parenting; patient satisfaction; job satisfaction; Touchpoints methodology; nursing intervention.

## INTRODUCTION

The investment and attention given to the child at an early age is essential to promote child health and development. This is a major concern of national and international institutions as the World Health Organization (WHO, 2013).

Touchpoints (TP) are expected periods preceding the motor, cognitive or emotional child development. These periods can cause predictable disruption in family relationships. The development affects the child and caregivers simultaneously and it is characterized by periods of change that imply adaptation (from child and family). This can cause disorganization within the family system and relationships. Healthcare professionals can help the family to experience and cope with these periods, facilitating the adaptation/transition process.

From the perspective of a developmental model, child development within the family context is considered as a discontinuous process, in which predictable regressions encourage touchpoints to happen. This occurs because the simultaneous acquisition of skills in different areas may cause regressions in others, thus resulting in disruption of routines, feelings and familiar interactive behaviors (Brazelton & Sparrow, 2006).

The TP approach is a preventive intervention methodology that aims at (i) supporting the parent-child relationship, (ii) increasing parenting skills and (iii) strengthening the relations between the family and the baby. This approach is expected to improve child development, healthy functional families, and competent and healthy professionals (Brazelton & Sparrow, 2006).

Touchpoints methodology allows parents to identify, rationalize and anticipate the child's behavior, recognizing the transitional moments in the emotional development and child behavior. Evidence shows that TP methodology contributes to the promotion of parenting skills, increasing self-esteem, confidence and parental power, allowing parents to respond assertive and contingently to the child's needs, assuming an active role in his/her development (Stadtler, Brandt, Novak, & Beauchesne, 2013). This methodology allows professionals to act preventively, strengthening and facilitating their relationship with the parents (Percy, 2006). Moreover, it decreases the risk of professional burnout and increases vitality and motivation (Stadtler et al., 2013).

Touchpoints methodology includes 8 guiding principles (Table 1e). Promoting children's health and parental competences is of foremost relevance and anticipatory care is paramount (Brazelton & Sparrow, 2006; Portugal, 2013). The succession of touchpoints in

a child development is like a map that can be identified and anticipated by both parents and care providers. They are much more focused on care provision of topics of interest to parents (e.g., food, discipline) than in traditional milestones (e.g., crawling, walking). Negotiations with the child in connection with these touchpoints can be seen as a source of satisfaction and encouragement for the family system. Prior knowledge of these touchpoints and strategies to cope with them can help parents by reducing the negative interaction that otherwise could harm the course of child development and result in problems in different areas (e.g., sleep, food and toilet training) (Brazelton & Greenspan, 2005; Brazelton & Sparrow, 2006). Besides assuming a developmental model, Touchpoints methodology is grounded in a relational model and therefore associated to establishment of interpersonal relationships. The latter is a central concept in nursing care (Portugal, 2015) that facilitates the identification of children and parents' needs, care planning and the implementation of interventions.

Table 1e – Touchpoints principles (adapted from Brazelton & Sparrow, 2006)

<b>PRINCIPLES</b>	<b>DESCRIPTION</b>
- <i>Recognize what you bring to the interaction</i>	Professional influence and is influenced by the families, his behaviors and emotions elicit his reactions and feelings. He should develop a “third ear” that helps him to develop self-reflection and maturity.
- <i>Look for opportunities to support mastery</i>	Professional highlights parent’s competence and self-esteem for example through observations of the child development progress and parental skills.
- <i>Use the behavior of the child as your language</i>	Child brings together the professional and the parents and both can see what the child’s does. His behavior is the means by which they work together and tells to the professional where he must go next.
- <i>Value disorganization and vulnerability as an opportunity</i>	Development is characterized by periods of normal disorganization that affect other infant systems and, simultaneously, family system. The professional use this opportunity to help parents to understand that disorganization means an anticipation of infant development progression.
- <i>Value and understand the relationship between you and the parent</i>	Professional enters to the family system so, he must reflect about what he represents to the family, how is distributed the power in the relationship, the professional is only an expert or also a partner?

<p><i>- Be willing to discuss matters that go beyond your traditional role</i></p>	<p>Professional needs to open up their experience as a human being in relation to the families he works with to be truly effective in supporting a family's overall well-being</p>
<p><i>- Focus on the parent-child relationship</i></p>	<p>The baby's demands elicit expectations and responses from parents based on their own infancy and present relationships experiences. So, observe and understanding the relationship and interaction between parent and child is one of the best tools to work with the family.</p>
<p><i>- Value passion wherever you find it</i></p>	<p>The passion of parents for children is energy, both, negative and positive that moves in the parenting process with all its challenges and joys inherent in creating and caring for a child. Therefore, the professional must find that passion and facilitate "falling in love" between parents and children.</p>

Family-centered care is essential to create a true partnership of care between health professional/patient (Jolley & Shields, 2009). Combined with the TP methodology, it contributes to the effectiveness and quality of children and family care (Stadtler et al., 2013). Patients' perception of satisfaction is an indicator of quality care (Yagil, Luria, Admi, Moshe-Eilon, & Linn, 2010; Pinto, & Silva, 2013) and is influenced by the personal background and previous experiences related to healthcare, emotional support (Yagil et al., 2010; Liu, Avant, Aunguroch, Zhang, & Jiang, 2014), health information (Eriksson & Svedlund, 2007), decision control (Campos & Graveto, 2009), technical and professional competences (Liu & Wang 2007).

Although nurses' satisfaction is associated to patient satisfaction, it is also influenced by autonomy and involvement in clinical decision making (Campos & Graveto, 2009), quality of nursing care (Tourangeau, McGillis Hall, Doran, & Petch, 2006), "personal and professional achievement" and "organizational performance and professional/patient relationship" (Castro et al., 2011).

Despite the important role nurses have in infant and young people health, little is known about the implementation of TP methodology by nurses, even less in outermost regions frequently prevented from participating in research projects. Therefore, this study aims to understand the experience and meaning given by parents of children at the age of 11 and of 24 months and by nurses to the experience of participating in the implementation of the TP methodology in Terceira Island, Azores, Portugal.

## **STUDY DESIGN AND METHODS**

A qualitative study was conducted using a phenomenological approach in order to obtain an in-depth understanding of the experience and meaning given by parents and nurses to their participation in the implementation of a quasi-experimental design to test the TP methodology by nurses. This type of research methodology is particularly useful to understand the meaning people build on their life experiences, permitting the comprehension of the “insider’s” perspective. The objective of phenomenology is the direct investigation and description of phenomena as consciously experienced, without theories about their causal explanations or their objective reality.

The study was conducted by nurses trained in the TP methodology, in a Primary Care Health Center, Terceira Island, Azores, Portugal, a context where population meets specific conditions of insularity and remoteness that make this context peculiar and unique. The experimental study is described in another article (Soares, Fuertes & Santos, 2015).

A major focus was given to the views, feelings and sense of satisfaction experienced both by the participant parents and nurses.

Data collection was performed using (i) the field-notes (FN) written by the two nurses who implemented the TP methodology and (ii) transcripts of focus groups (FG) recordings with the parents who were part of the Group with Intervention (Table 2e). Two diverse instruments were used for data collection (FN and FG) to adjust the best strategy for each group of participants (nurses and parents, respectively). As the number of nurses who participated in the intervention was only two, FN were more suitable than FG. Furthermore, FN are widely used in the implementation of innovative approaches aimed at changing current practices. This type of instruments allows the regular monitoring and self-assessment of experiences, feelings, and self-awareness about the development of knowledge through the intervention (Coutinho, 2011), The FN were essentially reflective, showing the experience that the two nurses lived in each TP session with the participant parents and children. The FG allowed us to gather several perspectives on the same situation as the participants were able to share the meanings attributed to the experience of participating in the implementation of the TP methodology. The two FG were conducted with 10 parents of 8 children that were part of the Group with Intervention. Participant parents and children were recruited considering the following inclusion criteria: being healthy and clinically normal, with no sensory or motor neuron disabilities, serious illness or congenital anomalies. All parents were healthy, with no mental problems or

known drug or alcohol addiction. Two fathers participated in this study. Table 2e illustrates the characteristics of the participants.

Table 2e – Sociodemographic data of the participants and technical data collection.

		Parents <i>N=10</i>	Nurses <i>N=2</i>
		<i>n</i>	<i>n</i>
Gender	Male	2	0
	Female	8	2
Age	27-32	3	0
	33-38	5	1
	39-44	1	1
	45-50	1	0
Years of formal education	1-4	1	0
	5-9	1	0
	10-14	2	0
	15-19	6	2
Technical data collection		Focus groups	Field-notes

Theoretical saturation was reached after conducting 2 FG, each one with 5 parents, including a total of 10 participants.

FN were written by the two participant nurses during the implementation of TP methodology (from March 2012 to August 2013). The two FG took place in August 2013, each one lasting for about 60 minutes; the FG sessions were audio-recorded and transcribed verbatim.

The full content of the transcripts of the FG sessions and the complete FN of both participant nurses were analyzed inductively. A combination of both narrative and thematic analysis was used.

Ethical approval was obtained from the director of the primary healthcare institution where it was conducted. Furthermore, the two nurses and the parents gave their written consent in participating in the implementation program of the TP methodology and inherent data

collection (FG). Results are presented anonymously with full respect for confidentiality of all participants.

## RESULTS AND DISCUSSION

Parents who participated in the study acknowledged that the TP sessions implemented by the nurses contributed considerably to the development of the following 8 aspects: Acquisition of knowledge and skills; Validation of parental practices; Improvement of child behavior; Parental confidence; Interpersonal relationship; Professional competences; Specific competences; Satisfaction.

The two nurses who implemented the abovementioned TP methodology perceived their experience as follows: Mobilization and application of TP principles; Learning process; Parents' interest; Feelings/emotions; Satisfaction.

These concepts will be defined and further discussed as follows.

Figure 1b illustrates the perceptions of both the participant parents and nurses.

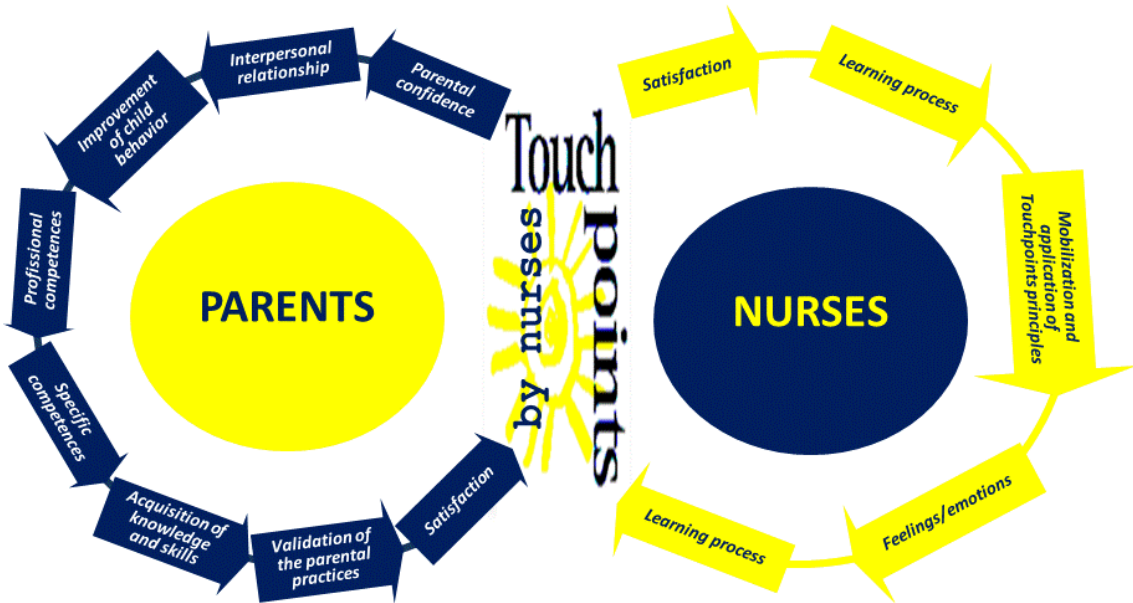


Figure 1b - Diagram of categories and subcategories founded in the study.

## **Experience of parents during the implementation of the touchpoints approach**

Participant parents considered that the implementation of the TP methodology by nurses contributed mostly to their “acquisition of knowledge and skills”, namely in terms of the following aspects: the development of their child, ways to stimulate his/her development, strategies to deal with tantrums, toilet training, importance of the educational process, discipline and love in the exercise of parenting, and the opportunity to make questions. This facilitated the learning of parental role and, consequently, a better exercise and experience of parenting.

“Using those techniques that the nurse taught me, made me able to know my daughter better and this was a way to see her development clearly or to correct what she was doing wrong.” (P8); “Thereafter I tried to teach him more, see what he's doing... there were things I never paid attention to my other children; now I'm more attentive and help him to learn new things” (P2); “we had a teaching session that pleased us and functioned very well, which is how to deal with the tantrum” (P5); “start going to the potty (referring to the sphincter training) was also something that we talked about (...) I was very distracted ” (P6); “we explain to him what is wrong to see if he understands” (P5); “the ‘no’ is essential, ‘no’ exists and should be a persistent ‘no’ (...) if ‘no’ becomes ‘yes’ easily, doesn't make sense” (P7); “Give lots of love, it is with love we should educate, changed deeply our approach” (P4); “there were things I had doubts and I could clarify” (P7).

Being parenting a transition process, those who experience it can be more vulnerable to risk (e.g., vulnerability to stress, illness, insufficient parenting role) (Meleis, 2011). Moreover, this transition is distinguished from others because it is a changing process that requires the acquisition of new competences, continuous learning and adaptation to the child's development. Understanding the child's behavior, knowing and promoting his/her development through adequate stimulation is a parents' need and interferes with the quality of the interaction between the dyad parents-child (Bryanton, Gagnon, Hatem, & Johnston 2009). Therefore, nurses need to be aware of the family's needs and find strategies to prepare and help parents to feel competent, secure and satisfied in the exercise of the parental role. This contributes to the well-being of the family and the promotion of child development and health.

In the parents' speech, participating in the TP sessions contributed to the “improvement of child behavior” and was an opportunity to validate the “parental practices”, increasing “parental confidence”.

“It was spectacular and helped us a lot, dealing with his tantrums, it decreased very much (...) was excellent” (P4); “always helps, or, if only, confirms something we already were doing and was correct. Often, we do instinctively what we think best for them” (P6); “to hear and talk about important things (referring to TP sessions) made me go home and reflect, also think: ‘maybe I’m not doing wrong or I have to change it’ ” (P7).

The improvement of child behavior as a result of using the TP methodology was shown elsewhere (Brandt et al., 2010). Parents’ confidence is related to the perception of self-efficacy, investment and performance of the role (Grossklaus & Marvicsin, 2014), thus resulting in parental satisfaction and in the quality of the interaction with the child. The purpose of the TP methodology is to act preventively in order to increase the capacities of parents and their self-esteem. This increases their confidence to deal with the challenges that arise in the different stages of child development (Brazelton & Sparrow, 2006). Moreover, professionals using this methodology emphasize a positive and supportive approach focusing their intervention on the strengths and potentials of the parents.

In our study, parents felt that the nurses who applied the TP methodology presented “specific competences” at personal, relational and communicational levels.

“I valued the fact that the sessions were held by someone expert in child health (...) the sessions were more specific, more personalized, the nurse X proved to be very competent in what she does” (P6); “The nurse X has that ability to (...) is an excellent person, health services needs people like her, with feelings and attentive to patients. I think anyone caring by her will be lucky because it is a very human person, with a vocation to be a great nurse (...) is one of the best nurses I have ever met ” (P7); “I think that nurse X is an excellent person (...) making people feel free to speak of their problems, making diagnoses, with a power of extreme observation, knowing intervene in certain situations with the appropriate comments” (P6); “I liked very much the way the nurse spoke to my son, the way she asked things.” (P2).

Touchpoints methodology is grounded on developmental and relational models (Brazelton & Sparrow, 2006). Holding a higher sphere of child development in its various dimensions allows the professional who uses this type of approach to help parents in identifying, streamlining and anticipating child behavior, improving their understanding about the transitory moments of the child’s emotional behavior. According to Lopes, Catarino and Dixe (2010), nurses not only need specialized knowledge about child development and health but also on methodologies that allow an interactive and positive relationship with

parents. This specialized knowledge gives security to parents (Oommen, Rantanen, Kaunonen, Tarkka, & Salonen, 2011). In addition to enabling professionals to obtain an appropriate response to parents' needs, parents emphasized the way this knowledge was shared through personal and professional skills. Participant parents highlighted the passion transmitted by the nurses in the way they acted and lived their profession, which distinguished them from other nurses making them look "specials".

The communication competences and interactive capacities expressed by nurses in their daily practice are not only associated with their personal characteristics. These attributes also emerge from the relational paradigm that underlies the TP model (Brazelton & Sparrow, 2006), promoting and facilitating the alliance and trustful relationship with parents. It is interesting to notice that the theme "interpersonal relationship" was one of the themes with the highest number of categories, thus showing the considerable appreciation parents gave to this dimension of nursing care during TP sessions. This theme is subdivided into eight sub-themes: "Observation attentive/affection"; "Person-centered care/approach"; "Presence"; "Friendship"; "Trust"; "Tranquility"; "Dedication"; "Support".

"Most of the opinions we have are statements that people give and give a hundred kids; what I noticed here was that the nurse tried to give appropriate advice to our son in particular in an adapted way according to our way of dealing with life, our extract, our profession. She could adapt the advice to our son specifically and to us and this is something that is really rare because most people give hints" (P4); "In addition, we also have a friend (referring to the nurse who held sessions)" (P8); "We also noticed, at that moment, (...) the nurse X, was available and attentive to us and to our child, reading what was in front, I noticed." (P6); " the nurse X had a very different purpose, she devoted herself to us, to that child" (P6); "there were things that the nurse X noted in my son that even paying to a pediatrician I never saw. She played with him, watched, evaluated the development and saw what he was able to do, at the same time managing to be affectionate" (P7); "nurse X was there to answer and say exactly what was right, we would not have to ask someone else, you know that she would say exactly what should be" (P8); "that support is very important" (P4); "that nurse transmit a peace and I felt this when we met..." (P2).

The concept of interpersonal relationship is central in nursing care (Portugal, 2015) and it is influenced by communicational competences (Yagil et al., 2010; Kinder & Allen, 2014). As in the Family Centered Care philosophy (Kuo et al., 2012), TP methodology focuses on

partnership, support and collaboration with parents and on the assumption that they are “the experts” in their child knowledge (Brazelton & Sparrow, 2006).

The accessibility and proximity with nurses interferes directly in the quality of the interaction with the family (Lopes, Catarino, & Dixe, 2010). In addition, nurses’ availability affects the parents’ satisfaction toward nursing care (Magnusson, Lagerberg, & Sundelin, 2012).

The patients’ trust in healthcare professionals contributes to a greater demand for care, adherence to treatment and continuity of care determining the satisfaction with the care provided (Thom et al., 2014).

In our study, parents considered that the TP sessions contributed to their “Satisfaction”.

“The sessions were very beneficial for everyone, it makes a big difference” (P6); “I loved it, if it were possible I'd like to continue these sessions” (P9).

Parents’ satisfaction with healthcare and parenting is crucial in the development of parental competences and abilities to care for their child (Grossklaus & Marvicsin, 2014). Moreover, this satisfaction is an indicator of a health gain and care outcome. These findings are aligned with another study (Soares, et al., 2015) suggesting that the TP methodology, in this population, was associated to high levels of parents’ satisfaction. Table 3e presents the summary of the themes and subthemes of the dimension “Experience of parents during the implementation of the Touchpoints approach”.

Table 3e - Summary of themes, subthemes and dimension: "Experience of parents and nurses during the implementation of the Touchpoints approach"

DIMENSION	Theme	Subtheme
EXPERIENCE OF PARENTS DURING THE IMPLEMENTATION OF THE TOUCHPOINTS APPROACH	Acquisition of knowledge and skills	Knowing the development of the child
		Tantrums
		Educational process
		Love / affection
		Clarify doubts
		Discipline
Interpersonal relationship	Interpersonal relationship	Development stimulation
		Toilet training
		Attentive observation and affection
		Person-centered care/approach
		Presence
		Friendship
Parental confidence Improvement of child behavior Professional competences Validation of the parental practices	Parental confidence Improvement of child behavior Professional competences Validation of the parental practices	Trust
		Tranquility
		Dedication
		Support
Specific competences	Specific competences	Personal competences
		Relational competences
		Communicational competences
Satisfaction	Satisfaction	
EXPERIENCE OF NURSES DURING THE IMPLEMENTATION OF THE TOUCHPOINTS APPROACH	Mobilization and application of Touchpoints principles	Recognize what you bring to the interaction
		Look for opportunities to support mastery
		Use the behavior of the child as your language
		Value disorganization and vulnerability as an opportunity
		Value and understand the relationship between you and the parent
		Be willing to discuss matters that go beyond your traditional role
Learning process Parents' interest	Learning process Parents' interest	Focus on the parent-child relationship
		Value passion wherever you find it
Negative feelings/emotions	Negative feelings/emotions	Anxiety
		Difficulty
		Nostalgia
Positive feelings/emotions	Positive feelings/emotions	Discomfort
		Motivation
Satisfaction	Satisfaction	Gratifying and rewarding sensation

## **Experience of nurses during the implementation of the touchpoints approach**

The participant nurses considered that the experience of participating actively in the implementation of the TP methodology allowed them to fully “Mobilize and apply the TP principles”. From the 8 TP principles the one that emerged more expressively in the FN was: “Recognize what you bring to the interaction”. This principle highlights the relevant contribution this methodology gives to personal and professional development as a result of the process of reflection and self-awareness it generates.

“Parental words do not come out from my mind. There is indeed to change behaviors, however difficult it may be. A whole relationship can be compromised with the first impact we give and receive (...) the judgments must stay outside the service.” (E2).

This is aligned with Yagil et al. (2010) who emphasized the need for nurses to develop self-knowledge. This is of foremost relevance as it helps nurses to become aware of the stereotypes they have and that may harm the relationship with patients.

According to the nurses’ own words, the implementation of TP methodology was associated with positive and negative “Feelings/emotions”.

The “positive feelings/emotions” referred to: “Motivation” and “Gratifying and rewarding sensation”.

“I felt an urge to talk to the mother, ‘playing’ with the child and be attentive to all was happening around me” (E2); “The mother expression of interest and surprise made me feel rewarding and useful, probably, I could help her (...) to interpret her daughter behavior making her feel secure, confident and knowledge empowered” (E1).

Professionals’ sense of effectiveness contributes to a higher investment of time in these tasks (e.g., vaccination, perform physical exams and health histories, provide health promotion, counseling and education) being associated to professional empowerment and to the quality of care (Hernandez-Marrero, 2006). Consequently, these professionals will have more work-related satisfaction, thus feeling rewarded, empowered and engaged (Bandura, 1997 cited by Grossklaus & Marvicsin, 2014).

Although much less expressively, the theme “negative feelings/emotions” was also found in the FN namely in terms of: “Anxiety”, “Difficulty”, “Discomfort” and “Nostalgia”.

“It is, indeed, difficult to follow the mother or both parents, the child and the whole surroundings of the moment.” (E2); “In this session I felt very upset when mom and dad said that health professionals (nurses) did not treat users equally, and if they

don't enjoy their profession shouldn't be there, father said yet that in many nursing visits he held back for not 'explode'". (E2); "I'm already beginning to miss these families because I know next month is the last one I will be with children and families, it is clear that they will be in my memory, and anybody can strip it by my mind. I found that I really love and want to be with families, with the children" (E1).

Even if "Nostalgia" can be considered a negative feeling/emotion, in this particular case it may also reflect something positive associated with the bond, depth, nature and quality of the relationship nurse/family established in the interaction process with families. Indeed, it is to remember with joy and fulfillment times and experienced relationship processes, wishing to experience them again. In our view, the depth, nature and quality of the relationship developed and lived with the "other" and the impact and importance it had in the life of both are essential and reflects the components for the construction and development of a true therapeutic relationship.

Nurses also highlighted the "learning process" associated with the implementation of TP methodology. Ingredients

"I learned a lot from all families, each with its own style, each with different skills but, all made me see there are no perfect families but all parents want the best for their children" (E1).

The conceptual framework of the TP methodology and its principles guide the professional and the relationship established with families. This triggers the professional to "open-up" to others (e.g., parents), questioning, reflecting on his/her actions and on him/herself as human being. The richness of this experience provides opportunities for learning and personal development.

"Parents' interest" was also valued by the participant nurses.

"Parents consider information provided very pertinent and saying that should always be given, they left the room thanking the accompaniment available" (E2).

Patient interest and recognition of the quality of care is an aspect that greatly influences the motivation and gratification experienced by nurses. Although conducted in different contexts, evidence shows that the recognition by the healthcare beneficiaries contributes to feelings of fulfillment among health professionals (Pereira, Fonseca & Carvalho, 2012; Smart et al., 2014).

Finally, nurses highlighted the "Satisfaction" related with the completion of the TP sessions.

“I loved to make this assessment because Z is a child who exudes tranquility, love and good humor, demonstrates - Happiness - in the presence of parents, he feels security to explore, imitate and interact with me”. (E2).

As suggested by Stadtler et al. (2013), nurses using TP methodology in their practices feel satisfaction and this is an important outcome of this approach. Table 3 presents the summary of themes and subthemes of the dimension “Experience of nurses during the implementation of the Touchpoints approach”.

### **STRENGTHS AND LIMITATIONS**

As far as we know, this is the first study focusing on the implementation of TP methodology by nurses in the outermost region of Azores. This is of relevance as people living in this region are often excluded from relevant research, which may increase their sense of isolation and vulnerability. Furthermore, it relates nurses’ perceptions and satisfaction to the ones of the parents. Nevertheless, a few limitations need to be mentioned: (i) The experiences and meanings among parents and professionals were obtained using different instruments (FG vs. FN); however, tools and data collection techniques had to be adapted to specificity of environment and participants. (ii) A mixed-methods approach could have reinforced the findings. Our findings refer only to qualitative data and could have been complemented by the use of a satisfaction scale for professionals and parents.

Despite these limitations, it is relevant to emphasize the novelty of the use of TP by nurse. This is also a relevant feature, which may contribute to the effective implementation of this methodology in practice, without additional costs to the healthcare system. Moreover, the combination of perspectives and techniques focusing on the experience of the participants, meaning and satisfaction, brings a better yield to this subject.

### **CLINICAL IMPLICATIONS**

This study addresses the experience of implementing the TP methodology by nurses, focusing on parents who are in a transition process, i.e., parenting, in the conviction that it can be a relevant contribution to nursing practice, health promotion and care. This can be achieved through the integration of this methodology in practice, which requires the interaction and relational dimension that are nuclear in nursing, contributing to the development of parental skills through a preventive approach based on the family’s strengths.

Based on our findings we can assume that the implementation of the TP methodology in practice contributes not only to the development of parenting skills, facilitating their

transition process of parenthood, but it also contributes to parental and professional emotional well-being and satisfaction.

The results of this study suggest that the use of this methodology contributes to professional and clients' satisfaction which can be considered a care outcome. In fact, we can assume that satisfied professionals and satisfied customers may be synonymous of high and good quality care. Therefore, based on our findings we recommend the integration of TP methodology in nursing education at undergraduate and post-graduate levels.

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## **CHAPTER IX - Conclusions**

9.1 – Overview of the study findings

9.2 – Limitations and strengths of the study design

9.3 – Implications for clinical practice and future directions

9.4 – Final considerations

In this chapter we address the main conclusions of this research, describing the main overview of the study findings, limitations and strengths of the study design. Finally, we present the relevance and implications for clinical practice and point future directions for nursing research in this field.

## 9.1 – Overview of the study findings

The first study entitled “Portuguese adaptation of the perceived quality of the relationship between parent-caregiver for nursing care scale - parents’ version” (Chapter IV) the data indicate the following results:

- Three factors were extracted from the scale: Trust/Caring; Collaboration/Partnership and Relational/Emotional;
- The fidelity of the items presented highly significant correlations;
- The scale has psychometric value for the Portuguese population;
- Mothers’ perception of the quality of the relationship with the nurses is positive. The variables Trust/Caring achieved greater significance and the factor Relational/Emotional the worst results.

The second study entitled: “Associations and determinants of infant development and mother-infant quality of interactions in Portuguese dyads” (Chapter V) demonstrated the following results:

- There is an association between maternal sensitivity, infant cooperation and infant development (most of SGS II subscales are associated with maternal sensitivity and infant cooperation scores, except for Locomotor and Self-care social). Dyads with higher maternal sensitivity and infant cooperation have better infant developmental outcomes;
- There is an association between infant development, biologic, family and social variables. High levels of maternal education have a positive impact on infant development. The increase of birth weight, APGAR at 5-minute, gestational age and number of nursing visits attended by the family at Primary Health Care Center contribute positively to increase infant development outcomes. Contrariwise, a higher number of siblings and low SES has a negative impact on infant development;
- The greater gestational age and number of nursing visits at the healthcare center improve better results in child development and quality of mother-child interaction; furthermore, the higher is maternal sensitivity, the greater is child cooperation. Mothers who fed their children with cow's milk after 3 months tend to exhibit lower sensitivity. Infant cooperation increases when maternal sensitivity is higher, and decreases the greater number of siblings.

The third study entitled “The impact of Touchpoints intervention on parental perception of the quality and promotion of the relationship with nurses” (Chapter VI) demonstrated the following results:

- There are significant mean differences for the participants’ global satisfaction between groups (Group with Intervention; Group without Intervention; Group without Intervention or Monitoring). The Group with Intervention was the group with the highest mean of global satisfaction with regard to the sub-scale Trust/Caring and, presented a significantly higher mean than the Groups without Intervention and without Intervention or Monitoring.

The fourth study entitled “Touchpoints’ by nurses: impact on maternal representations, child development and mother-infant interaction quality” (Chapter VII), although not presented as a full-written article, indicated the following results:

- Infant *Locomotor* development improved in GI;
- Maternal representations about the child and motherhood enhanced in GI;
- No significant results were found for mother-infant interaction in this direct comparison. Nevertheless, findings indicate that maternal sensitivity and infant cooperative behavior increased from 12 to 24 months in the in GI whereas it decreased in the GWI;
- Children at risk for developmental problems in the intervention and non-intervention groups improved their development in Speech and Language, Hearing and Language and in Self-care Social after the intervention with TP. Also, maternal sensitivity and infant cooperative behavior increased after Touchpoints intervention in dyads of “children at risk” for developmental problems when compared to the dyads of “children at risk without” these problems.

The fifth study entitled “*Touchpoints*: parents and nurses’ perceptions and satisfaction” (Chapter VIII) demonstrated the following results:

- Parents considered that the TP sessions implemented by nurses contributed to the acquisition of knowledge and skills, validation of parental practices, improvement of child behavior, parental confidence, development of interpersonal relationships, professional competences, development of specific competences, and satisfaction.
- Participant nurses perceived that the TP methodology contributed to the mobilization and application of TP principles. They perceived the process of participating in the implementation of TP as a learning process, which was

associated to the parents' interest. Several feelings/emotions were experienced during this process, which was perceived as contributing to nurses' satisfaction.

- Nurses caring for families should implement innovative methodologies that facilitate adaptation to parenting, such as Touchpoints.
- Implementing the TP methodology contributed to parents' and nurses' satisfaction.

Based on these findings, we conclude that, in our population sample, TP methodology did not have a direct impact on infant development (except for Locomotor) and quality of interaction between mother-infant. Nevertheless, in the presence of biological or environment risk intervention benefit child development, mother-infant interaction quality and maternal representations about the child and motherhood.

This methodology affected mothers' perception of the quality of interaction with nurse, and it increased nurses and mothers' levels of satisfaction. Hence, based on our findings, we sustain the thesis that, indirectly and from the parents' perspective, TP methodology contributed to the parenthood role efficacy, reason why we defend that it should be implemented through structured programs in health services by nurses.

The following diagram represents the main overall findings of this study (Figure 1c)

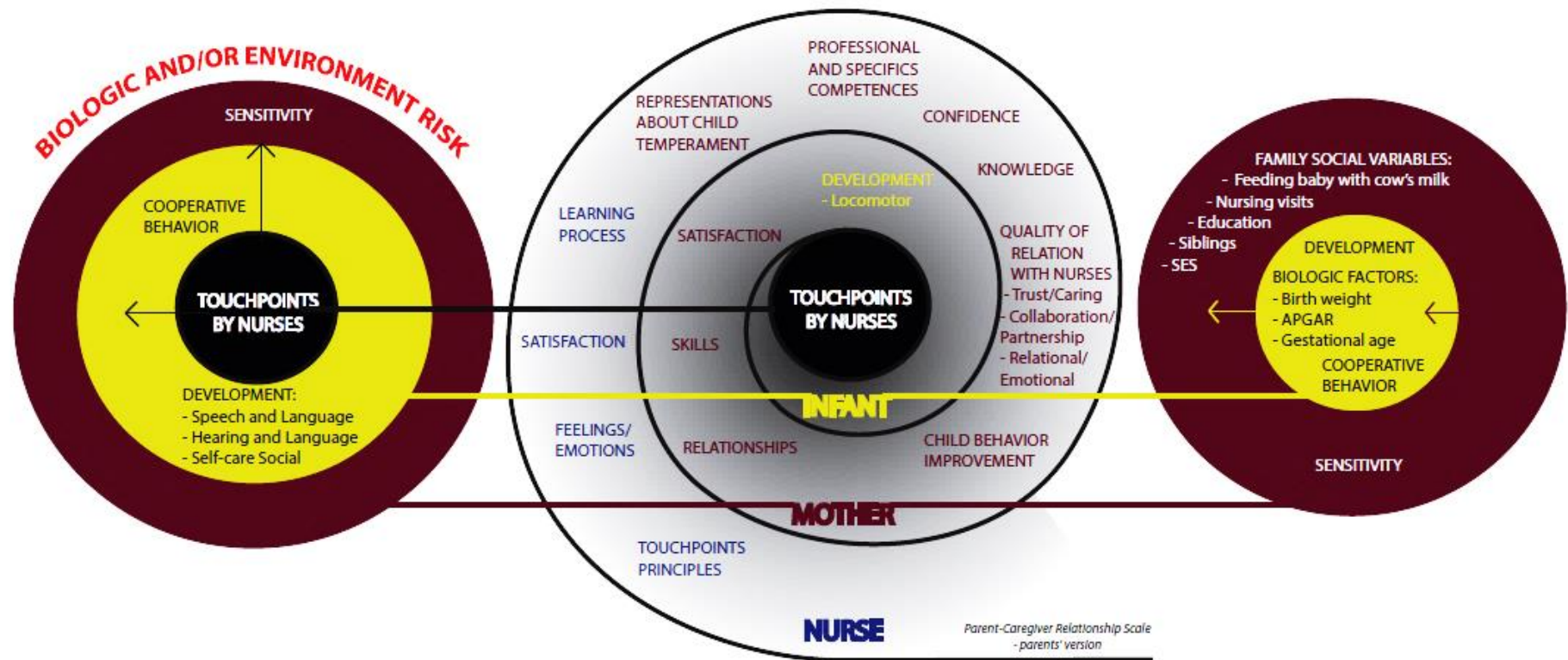


Figure 1c – Diagram with overview of the study results

## 9.2 – Limitations and strengths of the study design

A major strength of this study is its originality and novelty within the field of nursing sciences, knowledge and practices. In fact, to our acquaintance, this was the first time that the implementation of TP methodology by nurses was studied in a remote and outermost region, such as the Azorean Island of Terceira. Simultaneously, and because of this particularity, we consider that this study becomes even more necessary, useful and valid, as it provides an innovative contribution to nursing. Indeed, based on our findings we can assume that Touchpoints methodology, as originally conceived from the health promotion perspective, resulted to be quite effective, not only on mothers and nurses' satisfaction and perspective, but also because it allowed to screen risky situations. This represents a major impact of our findings in terms of prevention and early intervention.

Nevertheless, and beyond the limitations of each study per se thoroughly described in each correspondent chapter, a few overall limitations need to be considered.

First, the small sample size in most of our studies does not allow the extrapolation and generalization of our findings to a broader audience and population. Second, the Group without Intervention should not have contact with professionals trained in TP.

Nevertheless, due to the specificities of our groups of participants, this was not possible to be ensured and may have interfered with some of the findings. Finally, the results could have been optimized by including more participants and by conducting and monitoring TP sessions over a larger period of time.

Despite these limitations a few specific strengths are also worthwhile mention. First, the methodological quality of the research and combination of research methods allowed us to develop a wider comprehension and understanding to the phenomena that was being studied. Second, although small, the sample is representative of the Portuguese society, particularly the uniqueness of Azorean families in terms of maternal education, family SES, religious and ethnic groups. Furthermore, our study not only provides insights about the efficacy of an intervention, but has also the ethical relevance of conducting research with populations that are commonly excluded from relevant research projects. Third, and finally, the translation, adaptation and validation of a scale to know the parental perspective about the quality of parent-nurse relations is a keystone in the actual use of effective measures to improve the quality of nursing and healthcare services using a family-centered approach, particularly relevant in nursing practice.

### **9.3 – Implications for clinical practice and future directions**

Given the uniqueness of Portuguese culture, particularly in the specific context of Terceira Island, Azores, it is our hope that our work provides a culturally sensitive contribution to research on child development and parenting.

The Parent-Caregiver Relationship Scale - parents' version (PCRS) to nursing care presented here, by the generality of the results, can be a valuable tool to know the parental perspective regarding the quality of the parent-nurse relationship, and enabling the adaptation of the services and the adequacy of strategies approach and intervention with families. Also, it is an opportunity to implement management measures and consciousness about the professionals' quality of care and relationship established with families. In order to make it applicable in contexts other than Azores, allowing its generalization, the scale needs to be studied in other health contexts and in other samples with and without risk to child health or development.

The use of TP by nurses is also a relevant feature, probably the most meaningful of this study. In fact, based on our findings, we consider that the use of TP by nurses may contribute to the effective implementation of this methodology in practice, without additional costs to the healthcare system, reason why we recommend its inclusion on health policies. Moreover, the combination of methodologies, focusing on the experience of the participants, meaning and satisfaction, brings a better yield to this subject.

This can be achieved through the integration of this methodology in practice, which requires the interaction and relational dimension nuclear in nursing, contributing to the development of parental skills through a preventive approach based on the family's strengths.

Based on our findings we can also assume that the implementation of the TP methodology in practice contributes not only to the development of parenting skills, facilitating their transition process of parenthood, but is also contributes to parental and professional emotional well-being and satisfaction.

The results of this study indicate that the use of this methodology contributes to professional and clients' satisfaction, which can be considered a care outcome. In fact, we can assume that satisfied professionals and satisfied customers may be synonymous of high and good quality care. Therefore, based on our findings we recommend the integration of TP methodology in nursing education at undergraduate and post-graduate

levels. This integration should be monitored thoroughly using proper assessment methods and instruments.

#### **9.4 – Final considerations**

Despite this doctoral thesis fits and has been developed in the framework of a larger project of a quasi-experimental study with a very wide dimension, we decided to focus it on the context of perceptions, satisfaction and nurse satisfaction. Therefore, the relational dimension of nursing assumed the focal point, being aligned with the conceptual framework of a PhD project and dissertation in nursing sciences.

The results of the present study indicated that Touchpoints (TP) methodology implemented by nurses in a context of Primary Health Care Centre contributed to improve parents' and nurses' satisfaction.

With the results that we obtained, we have an output for nursing which is realized with the validation, for a specific context - the Azores - of a scale designed to measure the perception of the relationship, and indirectly quality of parental satisfaction, with the intervention of nurses. Therefore, this instrument can be used as a quality indicator in the future.

Parents from the intervention group perceived the quality of the relationship with the nurse with higher values when compared the parents of the other groups. Parents recognized that the experience of participating in the TP sessions facilitated the process of parenting by increasing parenting skills in knowledge, self-esteem, confidence and satisfaction with the parental role, improving the child's behavior. The perception of nature and quality of the parents' relationship with the nurse and their level of satisfaction with nurse increased.

In summary, TP methodology Implemented by nurses contributes to enhance the relationship between mothers/children, the acquisition of parental competences. Although the data is limited to two TP sessions and the study was conducted with a small sample and number of participants, we can foresee that the results could have been optimized if there were a greater number and monitoring of TP sessions over a prolonged period of time and if more participants were recruited We are aiming at doing so in future studies on this topic.

Such as parents, nurses also recognize that the use of TP methodology contributed to their satisfaction and learning process, which was reflected in personal and professional development. Therefore, the incorporation of this methodology in their attitudes and their professional skills increase the parents' competencies and reverts to parent's satisfaction.

The quality of client/nurse in order to facilitate the transition process of parenting is crucial. The TP methodology, besides contributing to the increase in parenting skills, favors the construction and strengthening of parent/nurse and their satisfaction. To this extent, we support its inclusion as an integral part of the models and performance practices and interventions of nurses in child health. Moreover, in order to extend the use of TP methodology in these specific health environments, we recommend that nurses can train other nurses to be able to use this methodology in their professional contexts. This should be performed and monitored using an evidence-based perspective.

### **“THE PERSONAL JOURNEY OF THIS DISSERTATION”**

Assuming that all production of human and social science has an autobiographical and self-referential character (Sousa Santos, 2003), I believe that the choice of this theme happened due to the fact that child health is one of the areas that I always had more interest in and where I have been investing more both at practical and theoretical levels. In addition, being a nurse and a nursing teacher also made me become aware of the responsibility of my role in the development of the human beings, increasing my sense of commitment to the advancement of nursing as a profession and discipline of knowledge. Besides the curiosity, the need to learn and to acquire new skills, I am convinced that the investment in professional excellence and quality of nursing care is an obligation of all nurses. This passes through further training, knowledge update and investment in improved practices, regardless of their area of intervention.

Since the beginning of my professional activity as a nurse in the context of primary health care, I was linked to the surveillance of child health and the needs of families experiencing parenting. In addition to the knowledge about child development, I always valued the relationship established with the child and family and the importance of communication. Being able to recognize, interpret and respond to the needs of families and representing a real resource and foundation for the family system is a constant challenge that involves the establishment of an authentic relationship with parents. This authenticity has the risk to expose the strengths and the limits of our knowledge, personality and individuality, which invites us to a process of self-reflection, self-analysis and self-knowledge that drives us to evolve as human beings.

Alongside with the development of a project for the creation of an early intervention team in childhood, my participation as a member of this team, the teaching of classes related to

child health and the monitoring of nursing students during their practices in clinical contexts were the motivation and driving force that impelled me to invest in my education process in this specific area. This occurred through the completion of a course of postgraduate and specialization in early childhood intervention, master degree in nursing sciences with the specific focus on the field of parenting and currently this PhD course also in nursing sciences.

When I started the doctoral program in Nursing Sciences, it became possible to participate in the project "Touchpoints: Longitudinal study about infant self-regulation, parenting and NBAS intervention impact on attachment during infants first year of life"<sup>3</sup>. After my training in Touchpoints methodology with Berry Brazelton (the pioneer who developed this methodological approach), I finally realized that the underlying conceptual foundation of this model and its principles of practice made sense to me and could be a way to get answers and solutions to many of my questions and concerns related to improving child health, better responding to the families' needs, facilitating relational processes and fostering parenting competencies, contributing to successful parenting and well-being of children and their families. The development of this doctoral dissertation and research process allowed me to further develop my skills, not only as a clinical nurse and teacher, but also as a nursing researcher. Only strong evidence-based practices can contribute to nursing development as a discipline and profession. If parenting was considered by International Council of Nurses (2011) as a focus of nursing practice, then it is essential to reflect about the effectiveness of intervention methodologies used by nurses during family attendance of nursing visits. By doing so, practices can be improved creating conducive conditions to parents' autonomy and satisfaction, providing them with the necessary competences for the full performance of the parental role and hence the quality of the relationship developed with their child. Being part of this process and having this "personal journey" not only allowed me to learn more about this topic but also helped me to better combine research, practice and education as drivers and pillars of my way of conceiving and being a nurse.

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<sup>3</sup> The project: "Touchpoints: Longitudinal study about infant self-regulation, parenting and NBAS intervention impact on attachment during infants first year of life" (PTDC /PSI-EDD/110682/2009) was granted by the FCT (Fundação para a Ciência e a Tecnologia). The researchers involved in this project and doctoral dissertation are: Marina Fuertes, Pedro Lopes dos Santos, Maria Goldschmidt, João Gomes-Pedro, João Justo, Maria Santos, Leopoldo Leitão, Miguel Barbosa, Rita Brito, Marjorie Beeghly and Edward Tronick. Maria do Céu Barbieri and Sandra Martins Pereira, although co-supervising this doctoral dissertation authored by Hélia Soares were not part of this FCT funded project and did not receive any funding for their collaboration. All authors of the articles declare no conflict of interests.

## **APPENDICES**

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**Appendix I – Medical and Familial Demographic Information**

**FICHA DE ANAMNESE**

DADOS PESSOAIS		
Código da criança	DN:	Sexo: M <input type="checkbox"/> F <input type="checkbox"/>
Local de Residência: Rural <input type="checkbox"/> Urbana <input type="checkbox"/>	Naturalidade	Nacionalidade

MÃE				
Ano de nascimento	Escolaridade	Profissão		
<u>Situação de empregabilidade</u>				
Emprego estável <input type="checkbox"/>	Emprego precário <input type="checkbox"/>	Desempregado <input type="checkbox"/>	Doméstico <input type="checkbox"/>	
<u>Estado civil</u>				
Solteiro <input type="checkbox"/>	Casado <input type="checkbox"/>	Divorciado <input type="checkbox"/>	Viúvo <input type="checkbox"/>	Outro <input type="checkbox"/>
Estado Saúde:	Saudável	Sim <input type="checkbox"/> Não <input type="checkbox"/>	Doenças:	

PAI				
Ano de nascimento	Escolaridade	Profissão		
<u>Situação de empregabilidade</u>				
Emprego estável <input type="checkbox"/>	Emprego precário <input type="checkbox"/>	Desempregado <input type="checkbox"/>	Doméstico <input type="checkbox"/>	
<u>Estado civil</u>				
Solteiro <input type="checkbox"/>	Casado <input type="checkbox"/>	Divorciado <input type="checkbox"/>	Viúvo <input type="checkbox"/>	Outro <input type="checkbox"/>
Estado Saúde:	Saudável	Sim <input type="checkbox"/> Não <input type="checkbox"/>	Doenças:	

SUBSTITUTO PARENTAL				
Ano de nascimento	Escolaridade	Profissão		
<u>Situação de empregabilidade</u>				
Emprego estável <input type="checkbox"/>	Emprego precário <input type="checkbox"/>	Desempregado <input type="checkbox"/>	Doméstico <input type="checkbox"/>	
<u>Estado civil</u>				
Solteiro <input type="checkbox"/>	Casado <input type="checkbox"/>	Divorciado <input type="checkbox"/>	Viúvo <input type="checkbox"/>	Outro <input type="checkbox"/>
<u>Grau parentesco:</u>				

DADOS FAMILIARES	
Irmãos: Não <input type="checkbox"/> Sim <input type="checkbox"/>	Lugar na fratria/sexo/saúde
<u>Tipo de família:</u>	
Nuclear <input type="checkbox"/> Monoparental <input type="checkbox"/> Alargada <input type="checkbox"/> Comunitária <input type="checkbox"/> Reconstruída <input type="checkbox"/> Outra <input type="checkbox"/>	

ANTECEDENTES PESSOAIS	
Período pré-natal	
<u>GRAVIDEZ</u>	
Planeada: Sim <input type="checkbox"/> Não <input type="checkbox"/>	Gravidez: normal <input type="checkbox"/> risco <input type="checkbox"/> N° de semanas de gravidez _____
Acompanhada pelo <u>médico</u> : Não <input type="checkbox"/> Sim <input type="checkbox"/>	
N° consultas médicas durante a gravidez _____	Data do início do acompanhamento (n° de semanas) _____
Acompanhada pelo <u>enfermeiro</u> : Não <input type="checkbox"/> Sim <input type="checkbox"/>	
N° consultas de enfermagem durante a gravidez _____	Data do início do acompanhamento (n° de semanas) _____
<u>Obs. (história da gravidez, intercorrências):</u>	
Período neo-natal	
Local do parto: Hospital <input type="checkbox"/> Domicílio <input type="checkbox"/> Outro <input type="checkbox"/>	
Tipo de parto: Eutócico <input type="checkbox"/> Distócico <input type="checkbox"/> Forceps <input type="checkbox"/> Ventosa <input type="checkbox"/> Cesariana <input type="checkbox"/> Reanimação Não <input type="checkbox"/> Sim <input type="checkbox"/>	
Peso ao nascer _____ (gramas) Estatura _____ (cm) P.cefálico _____ (cm) APGAR ____ (1ºmin) ____ (5ºmin)	
Hospitalizações:	

ESTADO DE SAÚDE	
<b>Vigilância de Saúde</b>	
Médico assistente: Não <input type="checkbox"/> Sim <input type="checkbox"/> Nº consultas _____	
Consulta de Enfermagem: Não <input type="checkbox"/> Sim <input type="checkbox"/> Nº consultas _____	
Doenças a assinalar ao longo do desenvolvimento (asma, alergias): Não <input type="checkbox"/> Sim <input type="checkbox"/> _____	
Acidentes a assinalar ao longo do desenvolvimento: Não <input type="checkbox"/> Sim <input type="checkbox"/> _____	
Deficiências sensoriais Não <input type="checkbox"/> Sim <input type="checkbox"/>	
A criança está a ser seguida por algum médico especialista? Não <input type="checkbox"/> Sim <input type="checkbox"/> quais as razões _____	
A criança está a tomar alguma medicação? Não <input type="checkbox"/> Sim <input type="checkbox"/> qual? _____	
Existiram internamentos? Não <input type="checkbox"/> Sim <input type="checkbox"/> qual a razão? _____ Qual a duração? _____ Que acompanhamento existiu por parte dos pais? _____ Como reagiu a criança aos encontros? _____	
E à separação?	

ROTINAS ACTUAIS	
Com quem permanece durante o dia _____	
Nº de prestadores de cuidados mais próximos/por 24h _____	
Nº de prestadores de cuidados principais desde que nasceu _____	
<u>Durante o dia</u>	
Tem contacto com outras crianças? Não <input type="checkbox"/> Sim <input type="checkbox"/> da mesma idade <input type="checkbox"/> mais velhas <input type="checkbox"/> contacta só com adultos <input type="checkbox"/>	
<u>Sono</u>	
Períodos em que dorme em 24h _____	
Adormece com facilidade Sim <input type="checkbox"/> Não <input type="checkbox"/>	
Usa chupeta: Sim <input type="checkbox"/> Não <input type="checkbox"/> Dedo: Sim <input type="checkbox"/> Não <input type="checkbox"/> Objecto de transição: Sim <input type="checkbox"/> Não <input type="checkbox"/> Brinquedo: Sim <input type="checkbox"/> Não <input type="checkbox"/>	
Acorda bem-disposto Sim <input type="checkbox"/> Não <input type="checkbox"/>	
Rabugento ensonado irritado (períodos em 24 horas) _____	
<u>Banho</u>	
Nº. de vezes por semana __ horário preferido _____	
Gosta da actividade: Sim <input type="checkbox"/> Não <input type="checkbox"/> Chora durante o banho Sim <input type="checkbox"/> Não <input type="checkbox"/>	
Irritado, rabugento durante o banho? Sim <input type="checkbox"/> Não <input type="checkbox"/>	
Mostra prazer durante o banho? Sim <input type="checkbox"/> Não <input type="checkbox"/>	
<u>Alimentação</u>	
Aleitamento materno: Não <input type="checkbox"/> Sim <input type="checkbox"/> Duração: _____ meses	
Horário das refeições / dia _____ Intervalo _____	
Tipo de alimentação _____	
Dificuldades na alimentação: Não <input type="checkbox"/> Sim <input type="checkbox"/> especificar _____	
Alergias alimentares: Não <input type="checkbox"/> Sim <input type="checkbox"/> especificar _____	
<u>Eliminação</u>	
Dificuldades na Eliminação intestinal? Não <input type="checkbox"/> Sim <input type="checkbox"/> Diarreia <input type="checkbox"/> Obstipação <input type="checkbox"/> Cólicas <input type="checkbox"/>	
Dificuldades na Eliminação urinária? Não <input type="checkbox"/> Sim <input type="checkbox"/> Quais _____	

### DESENVOLVIMENTO

Sorri.....													
Vocaliza.....													
Controlo da cabeça .....													
Segura um objecto.....													
Vira-se na cama.....													
Senta-se sem apoio.....													
Arrasta-se.....													
Preensão (polegar-indicador) .....													
Põe-se de pé.....													
Anda com apoio.....													
De pé sozinho.....													
Anda sozinho.....													
	0	1	2	3	4	5	6	7	8	9	10	11	12

IDADE EM MESES

### HABITAÇÃO

Condições de salubridade da habitação: Zona urbana salubre  Zona insalubre  Barraca

Espaço Habitacional:

- Próprio sem encargos Sim  Não   
 Próprio com encargos   
 Alugado   
 Cedido   
 Partilhado   
 Anexos de uma casa   
 Vive num quarto   
 Outra situação

Distribuição do agregado familiar por número de quartos: Adequada  Não adequada

- Condições de higiene Boas  Razoáveis  Más   
 Condições de Conforto Boas  Razoáveis  Más   
 Condições de Arejamento Bom  Razoável  Mau   
 Condições de Aquecimento Bom  Razoável  Mau   
 Condições de luminosidade Bom  Razoável  Mau   
 Condições de Electricidade: Sim  Não   
 Água: Com ligação à rede pública  Sem ligação à rede pública   
 WC: Sim  Não   
 Berço: Sim  Não

Divisão em que a criança dorme: Quarto dos pais  Quarto dos irmãos  Quarto próprio  Outro

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**Appendix II – Schedule of Growing Skills II**

Data das Avaliações					
<b>COMPETÊNCIAS NO CONTROLO POSTURAL PASSIVO</b>					
<b>Decúbito Dorsal</b>					
1. Cabeça centrada em relação ao tronco	1				
2. Levanta as pernas até à posição vertical e agarra os pés (olha para os pés)	2				
<b>Suspensão Ventral</b>					
3. Cabeça em alinhamento com o tronco, ancas em semi-extensão	1				
4. Cabeça acima da linha do tronco, ancas e ombros em extensão	2				
<b>Puxar para Sentar</b>					
5. Cabeça descaída para trás, quando se puxa a criança para a sentar com o tronco vertical; a cabeça fica momentaneamente direita, antes de descair para a frente	1				
6. Cabeça pouco ou nada descaída	2				
7. Puxa os ombros para a frente e faz força para se sentar	3				
<b>Posição Sentada (com apoio de um adulto)</b>					
8. Costas curvadas	1				
9. Costas direitas	2				
<b>Resultado das Competências no Controlo Postural Passivo</b>					

<b>COMPETÊNCIAS NO CONTROLO POSTURAL ACTIVO</b>					
<b>Decúbito Ventral</b>					
10. Cabeça de lado, apoiada numa das faces, nádegas elevadas com os joelhos flectidos sob o abdómen, braços junto ao peito com os cotovelos flectidos	1				
11. Levanta a cabeça momentaneamente, nádegas elevadas	2				
12. Levanta a cabeça e a parte superior do tronco, apoiando-se nos antebraços e mantendo as nádegas no plano de apoio	3				
13. Suporta o peso do corpo sobre os braços estendidos e as palmas das mãos abertas	4				
14. Adopta a posição de gatinhar	5				
<b>Posição Sentada (sem apoio)</b>					
15. Mantém-se sentado/a sem apoio, embora só por uns momentos	1				
16. Mantém-se sentado/a sem apoio, por períodos prolongados (pelo menos, durante 10 segundos)	2				
17. Consegue adoptar a posição sentada, a partir das posições ventral ou dorsal	3				
<b>Posição de Pé</b>					
18. Quando segurado/a na posição de pé, suporta algum peso do corpo nos pés	1				
19. Quando segurado/a na posição de pé, suporta a totalidade do peso do corpo nos pés	2				
20. Consegue manter-se de pé com apoio	3				
21. Consegue pôr-se de pé	4				
<b>Resultado das Competências no Controlo Postural Activo</b>					

**Legenda**

- Para estes itens, é necessária a utilização de material estímulo.
- Ⓞ Os itens assinalados com um círculo à volta do número contém um conteúdo cognitivo.
- Q Utilize esta letra quando a qualidade do desempenho for questionável. Mesmo assim, pontue o item.

Data das Avaliações					
<b>COMPETÊNCIAS LOCOMOTORAS</b>					
<b>Movimento e Equilíbrio</b>					
22. Rebola e contorce-se, para se deslocar	1				
23. Tenta gatinhar, rastejar ou deslocar-se na posição sentada (nativgradação/"shuffler"), para se movimentar	2				
24. Consegue andar quando lhe seguram as mãos, suportando todo o peso do corpo nos pés	3				
25. Anda agarrado/a à mobília (ou empurrando brinquedos com rodas)	4				
26. Anda sozinho/a, com os pés afastados e os braços levantados para manter o equilíbrio	5				
27. Anda bem, com os pés ligeiramente afastados; consegue contornar esquinas e parar bruscamente	6				
28. Apanha objectos do chão sem cair	7				
29. Corre de forma confiante, parando e recomeçando cuidadosamente e evitando obstáculos	8				
30. Salta, levantando os dois pés do chão	9				
31. Anda em bicos de pés	10				
32. Corre em bicos de pés	11				
33. Salta de pé-coxinho três vezes	12				
34. Consegue andar, pé ante pé (dedos com calcanhar), dando, no mínimo, 4 passos	13				
35. Apoia-se, pelo menos durante 8 segundos, em cada um dos pés separadamente	14				
<b>Subir e Descer Escadas</b>					
36. Sobe escadas gatinhando	1				
37. Sobe escadas de mão dada, colocando os 2 pés em cada degrau	2				
38. Sobe e desce escadas de forma confiante, colocando os 2 pés em cada degrau	3				
39. Sobe escadas sozinho/a (colocando 1 pé em cada degrau) e desce (colocando os 2 pés em cada degrau)	4				
40. Sobe e desce escadas sozinho/a - colocando um pé em cada degrau (tal como os adultos)	5				
41. Sobe escadas a correr	6				
<b>Resultado das Competências Locomotoras</b>					

<b>COMPETÊNCIAS MANIPULATIVAS</b>					
<b>Aptidão Manual</b>					
42. Mãos fechadas sobre o polegar	1				
43. Olha para as mãos e brinca com os dedos	2				
44. Aperta as mãos pressionando as palmas uma contra a outra	3				
45. ■ Preensão palmar	4				
46. ■ Passa um brinquedo de uma mão para a outra	5				
47. ■ Segura dois cubos, um em cada mão, juntando-os	6				
48. ■ Preensão de pinça inferior	7				
49. ■ Preensão de pinça fina	8				
50. ■ Atira brinquedos para o chão intencionalmente (lançamento)	9				
51. ■ Vira páginas de um livro, várias em simultâneo	10				
52. ■ Vira páginas de um livro, uma de cada vez	11				
53. ■ Coloca 10 pinos dentro da chávena em 30 segundos	12				
54. ■ Coloca 8 pinos no tabuleiro para pinos em 30 segundos	13				

Data das Avaliações					
<b>COMPETÊNCIAS MANIPULATIVAS (CONT.)</b>					
<b>Cubos</b>					
55	■ Torre com 2 cubos	1			
56	■ Torre com 3 cubos	2			
57	■ Torre com 4 a 6 cubos	3			
58	■ Torre com 7 ou mais cubos	4			
59	■ Constrói uma ponte, após demonstração	5			
60	■ Constrói 3 degraus com 6 cubos, após demonstração	6			
<b>Desenho</b>					
61	■ Faz rabiscos, movimentando o lápis de um lado para o outro	1			
62	■ Faz rabiscos circulares	2			
63	■ Imita uma linha vertical e/ou horizontal	3			
64	■ Imita um círculo	4			
65	■ Imita uma cruz	5			
66	■ Imita um quadrado	6			
<b>Desenho da Figura Humana</b>					
67	■ Desenha a cabeça e outra parte do corpo	1			
68	■ Desenha a cabeça, as duas pernas e os dois braços	2			
69	■ Desenha a face, o tronco, as pernas e os braços	3			
<b>Resultado das Competências Manipulativas</b>					

Data das Avaliações					
<b>COMPETÊNCIAS VISUAIS</b>					
<b>Função Visual</b>					
70	■ Volta-se na direcção de uma luz difusa	1			
71	■ Fixa, por um breve período de tempo, um pompom à distância de 30 cm	2			
72	■ Segue com o olhar um objecto que oscila num movimento pendular de 90°	3			
73	■ Segue com o olhar um objecto que oscila num movimento pendular de 180°	4			
74	■ Converte os olhos quando um objecto se aproxima	5			
75	■ Aponta o dedo com precisão para um objecto pequeno	6			
<b>Compreensão Visual</b>					
76	■ Vê o brinquedo cair, mas não o procura no chão com o olhar (não há noção de permanência do objecto)	1			
77	■ Procura o brinquedo com o olhar no local correcto onde este caiu (há noção de permanência do objecto)	2			
78	■ Procura o brinquedo perdido	3			
79	■ Observa, com interesse, movimentos das pessoas que se encontram a alguma distância ou que vê através de uma janela	4			
80	■ Aponta com o dedo para objectos distantes	5			
81	■ Mostra interesse por imagens	6			
82	■ Reconhece detalhes no Livro de Figuras	7			
83	■ Completa o Quadro de Encaixe com formas geométricas	8			
84	■ Completa o Quadro de Encaixe com peixes	9			
85	■ Reconhece pequenos detalhes de uma imagem	10			
86	■ Combina 2 cores	11			
87	■ Combina 4 cores	12			
88	■ Combina todas as 10 cores dos cartões	13			
89	■ Realiza o teste de visão linear (6 metros)	14			
<b>Resultado das Competências Visuais</b>					

Data das Avaliações					
<b>COMPETÊNCIAS NA AUDIÇÃO E LINGUAGEM</b>					
<b>Função Auditiva</b>					
90	■ Sobressalta-se devido a um barulho súbito	1			
91	■ Responde à voz	2			
92	■ Olha na direcção da voz dos pais	3			
<b>Compreensão da Linguagem</b>					
93	■ Vira a cabeça na direcção da fonte sonora	1			
94	■ Está atento/a aos sons do seu dia-a-dia	2			
95	■ Compreende o significado de "não"/"adeus"	3			
96	■ Reconhece o próprio nome	4			
97	■ Compreende os nomes de objectos ou pessoas que lhe são familiares	5			
98	■ Consegue seleccionar 2 objectos de um grupo de 4	6			
99	■ Consegue indicar 2 partes do corpo que são nomeadas (p.e. nariz e mãos)	7			
100	■ Consegue indicar as partes do corpo de uma boneca (p.e. olhos e barriga)	8			
101	■ Executa uma ordem com duas acções	9			
102	■ Mostra compreender os verbos, utilizando figuras que representam diferentes acções	10			
103	■ Mostra compreender as funções dos objectos, utilizando figuras	11			
104	■ Mostra compreender preposições	12			
105	■ Mostra compreender adjectivos relacionados com o tamanho	13			
106	■ Mostra compreender a negação	14			
107	■ Executa uma ordem com duas instruções	15			
108	■ Compreende perguntas de alguma complexidade	16			
109	■ Executa uma ordem com três instruções	17			
110	■ Compreende a negação em frases complexas	18			
<b>Resultado das Competências na Audição e Linguagem</b>					

Data das Avaliações					
<b>COMPETÊNCIAS NA FALA E LINGUAGEM</b>					
<b>Vocalização</b>					
111	■ Emite sons guturais	1			
112	■ Vocaliza quando está contente	2			
113	■ Ri, sorri e grita quando brinca	3			
114	■ Palavra contínua e melodiosamente (variando a entoação da voz)	4			
115	■ Imita sons produzidos pelos adultos (tosse, "brrr", estalar os lábios)	5			
<b>Linguagem Expressiva</b>					
116	■ "Jargão" constante recorrendo a vogais e muitas consoantes	1			
117	■ Utiliza uma palavra com significado	2			
118	■ Comunica, recorrendo simultaneamente a gestos e vocalizações	3			
119	■ Utiliza várias palavras (pelo menos 4) com significado	4			
120	■ Utiliza mais de 7 palavras com significado	5			
121	■ Tenta repetir as palavras que são verbalizadas por outros	6			

Data das Avaliações					
<b>COMPETÊNCIAS NA FALA E LINGUAGEM (CONT.)</b>					
122. Junta 2 ou mais palavras para construir frases simples	7				
123. Nomeia objectos e figuras familiares	8				
124. Fala numa linguagem habitualmente entendida pela mãe	9				
125. Utiliza palavras interrogativas (p.e., o quê, onde?) e utiliza dois pronomes pessoais (p.e. eu, tu)	10				
126. Consegue manter conversas simples e descrever acontecimentos	11				
127. Conhece diversas rimas infantis, canções, ou anúncios	12				
128. Com alguma imprecisão, consegue relatar acontecimentos recentes	13				
129. Discurso claro e fluente	14				
130. ■ Consegue construir uma frase com 5 ou mais palavras	15				
131. ■ Consegue descrever uma sequência de eventos	16				
132. ■ Consegue dar uma explicação para os eventos	17				
<b>Resultado das Competências na Fala e Linguagem</b>					

Data das Avaliações					
<b>COMPETÊNCIAS NA INTERACÇÃO SOCIAL</b>					
<b>Comportamento Social</b>					
133. Sorri	1				
134. Responde positivamente ao toque amistoso	2				
135. Aprecia o banho e os cuidados diários	3				
136. ■ Leva tudo à boca	4				
137. Mostra aborrecimento quando é contrariado/a	5				
138. Bate palmas ou acena "adeus"	6				
139. Explora objectos no ambiente circundante	7				
140. Imita as actividades diárias	8				
141. Comportamento rebelde	9				
142. Brinca com outras crianças mas não partilha brinquedos	10				
(143) Partilha brinquedos	11				
(144) Mostra interesse pelos irmãos e companheiros de brincadeira	12				
145. Ajuda activamente os irmãos e companheiros de brincadeira	13				
146. Nomeia os seus melhores amigos	14				
<b>Brincar</b>					
147. ■ Abana uma roca	1				
148. ■ Procura um brinquedo que está parcial, mas não totalmente, escondido	2				
149. ■ Encontra rapidamente um brinquedo escondido	3				
(150) ■ Explora, com interesse, as propriedades e funcionalidades dos brinquedos e de outros objectos	4				
151. Brinca com satisfação sozinho/a ou junto de um familiar	5				
(152) Brinca com destreza	6				
153. ■ Chuta uma bola pequena	7				
154. ■ Atira uma bola pequena com o braço erguido	8				
(155) ■ Espera pela sua vez nas brincadeiras	9				
(156) Participa em brincadeiras de forma cooperativa e imaginativa, respeitando as regras	10				
<b>Resultado das Competências na Interacção Social</b>					

Data das Avaliações					
<b>COMPETÊNCIAS NA AUTONOMIA PESSOAL</b>					
<b>Alimentação</b>					
157. Leva as mãos ao biberão quando alimentado/a	1				
158. Agarra a colher	2				
159. Segura, morde e mastiga pequenos pedaços de comida	3				
160. Consegue beber de um copo, com ajuda	4				
161. Segura a colher mas não se alimenta	5				
162. Segura a colher e leva-a à boca mas não consegue evitar que ela se vire	6				
163. Segura o copo com ambas as mãos e bebe sem derramar muito líquido	7				
164. Segura a colher e leva a comida à boca com segurança	8				
165. Levanta o copo com uma mão, bebe e volta a colocá-lo no lugar	9				
166. Come bem com a colher	10				
167. Come bem com a colher e o garfo	11				
168. Come com garfo e faca (apenas com uma pequena ajuda)	12				
169. Faz a refeição completa sem ajuda	13				
<b>Higiene e Vestir</b>					
170. Indica que as fraldas estão molhadas ou sujas, chorando ou contorcendo-se	1				
171. Antecipa a necessidade de cuidados de higiene com vocalizações ou agitação	2				
172. Mantém-se seco/a durante o dia	3				
173. Vocaliza ou chama a atenção para a necessidade de cuidados de higiene, em tempo razoável	4				
174. Mantém-se habitualmente seco/a durante a noite	5				
175. Lava as mãos	6				
176. Lava e seca as mãos, tenta escovar os dentes	7				
177. Lava e seca completamente a face e as mãos	8				
178. Veste-se e despe-se sozinho/a, excluindo abotoar botões ou fechos	9				
179. Veste-se e despe-se sozinho/a, incluindo abotoar botões ou fechos	10				
<b>Resultado das Competências na Autonomia Pessoal</b>					

<b>Resultado das Competências Cognitivas</b>					
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<b>Legenda</b>					
■ Para estes itens, é necessária a utilização de material estímulo.					
⊙ Os itens assinalados com um círculo à volta do número contêm um conteúdo cognitivo.					
Q Utilize esta letra quando a qualidade do desempenho for questionável. Mesmo assim, pontue o item.					

## SGS II - ESCALA DE AVALIAÇÃO DAS COMPETÊNCIAS NO DESENVOLVIMENTO INFANTIL

### Folha de Perfil

Nº de Ficha:

Nome: .....

Morada: .....

Data de Nascimento: ..... Idade: .....

Recomendo a seguinte acção:

- a) Ser visto/a daqui a  meses para uma nova avaliação  
 meses para uma avaliação de rotina

Avaliador: .....

Profissão: .....

Data da Avaliação: ..... / ..... / .....  
 (Dia) (Mês) (Ano)

Local da Avaliação: .....

Assinatura: .....

Idade (meses)	Áreas de Competências										Idade (meses)
	Controlo Postural Passivo	Controlo Postural Activo	Locomotoras	Manipulativas	Visuais	Audição e Linguagem	Fala e Linguagem	Interação Social	Autonomia Pessoal	Cognitivas	
60 meses			20	28	20	21	22	24	23	34	60 meses
			19	27		20	21		22	33	
48 meses			18	26	19	19	20	23	20	31	48 meses
			17	25		18	19		19	30	
36 meses			16	23	18	17	18	22	17	27	36 meses
			15	22	17	16	17	21	16	26	
30 meses			14	20	16	15	16	19	15	23	30 meses
			13	19		14	15	18	14	22	
24 meses			12	17	15	13	14	17	13	19	24 meses
			11	16	14	12	13	16	12	18	
18 meses			9	14	13	11	11	15	10	15	18 meses
			8	13		10		14	9	14	
15 meses			6	11	12	9	10	13	7	11	15 meses
			5	10		8	9	12	6	10	
12 meses		12	4	9	11	8	7	10	5	8	12 meses
			3	8	10	7	6	9	4	7	
10 meses		11	2	7	9	6	5	7	3	5	10 meses
		10	1							4	
8 meses		9		6	8	5	4	6	2	3	8 meses
		8								2	
6 meses	9	6		5	7	4	3	5	1	1	6 meses
	8	5		4	6	3		4			
3 meses	6	3		3	5	2	2	3			3 meses
	5			2	4			2			
1 mês	3	2		1	3		1	1			1 mês
	2				2						
0 meses		1			1	1					0 meses
Áreas de Competências	Controlo Postural Passivo	Controlo Postural Activo	Locomotoras	Manipulativas	Visuais	Audição e Linguagem	Fala e Linguagem	Interação Social	Autonomia Pessoal	Cognitivas	
*Qualidade											

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**Appendix III – Family Needs Survey**

## Inventário das Necessidades da Família

(Bailey & Simeonsson, 1990; Traduzido por Ana Serrano e Adaptado por Hélia Soares & Marina Fuertes, 2012)

Código da Criança: \_\_\_\_\_ Data \_\_\_\_\_

Caro pai/mãe

Muitas famílias com crianças pequenas têm necessidade de informação e apoio. Se quiser, as pessoas que trabalham conosco estão dispostas a avaliar juntamente consigo essas necessidades mais frequentemente descritas pelas famílias. Ser-nos-ia útil se fosse marcando com um X nas colunas à direita qualquer dos tópicos que gostaria que fossem discutidos/analísados. No final existe um espaço para poder escrever outros tópicos que não estão incluídos nesta lista mas que gostaria de ver discutidos.

Se escolher responder a este questionário a informação nele contida será confidencial. Se não quiser responder neste momento guardar esta informação consigo.

TÓPICOS ASSUNTOS	Gostaria de discutir este assunto com uma pessoa do nosso programa?		
	Não	Não tenho a certeza	Sim
<b>Informação</b>			
1. Como é que as crianças crescem e se desenvolvem?			
2. Como brincar ou falar com o meu filho/a?			
3. Como lidar com alguma preocupação que eu tenha sobre o desenvolvimento do meu filho/a?			
4. Como lidar com alguma preocupação que eu tenha sobre o comportamento do meu filho/a?			
<b>Apoio Social e Familiar</b>			
1. Falar com alguém da minha família acerca de preocupações/problemas			
2. Ter amigos com quem falar			
3. Ter mais tempo para mim mesmo			
4. Ajudar a nossa família a discutir problemas e a encontrar soluções			

5. Ajudar a nossa família a apoiarem-se uns aos outros em momentos difíceis			
6. A decidir quem irá fazer as tarefas caseiras, tomar conta das crianças e outras tarefas familiares.			
	<b>Não</b>	<b>Não tenho a certeza</b>	<b>Sim</b>
<b>Finanças</b>			
1. Pagar as despesas tais como: comida, casa, cuidados médicos, roupas ou transporte			
2. Encontrar emprego			
3. Pagar a uma ama ou creche			
4. Pagar brinquedos e/ou “tempos livres” para o meu filho/a			
<b>Tomar Conta da Criança</b>			
1. Localizar amas/ <i>baby-sitters</i>			
2. Localizar um infantário ou pré – escola para o meu filho/a			
3. Conseguir alguém que me fique com o meu filho/a para eu poder fazer outras coisas (ir à missa, às compras, ir ao médico, ir ao cabeleireiro)			
<b>Serviços Comunitários</b>			
1. Localizar um médico, enfermeiro ou outro técnico que me compreenda e compreenda as necessidades do meu filho/a			
2. Sentir-me integrada e apoio social na igreja, na minha freguesia...			

<p><b>Outros</b></p> <p>Por favor indique outros assuntos ou forneça informações que pensa ser importante que seja discutida</p> <hr/> <hr/> <p>Há alguma pessoa particularmente com quem preferia encontrar-se e falar?</p> <hr/> <hr/>
--

Obrigado pelo seu tempo.

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**Appendix IV – Family Socioeconomic Status**

## Classificação Social de Graffar da Família

### 1- CRITÉRIOS

#### A Profissão

Grau	Condições	Opção
1º	Directores de bancos, de empresas, licenciados, engenheiros, profissionais com títulos universitários ou de escolas especiais e militares de alta patente	
2º	Chefes de secção administrativas ou de negócios de grandes empresas, subdirectores de bancos, peritos, técnicos e comerciantes	
3º	Ajudantes técnicos, desenhadores, caixeiros, contra-mestres, oficiais de primeira, encarregados, capatazes e mestre-de-obras	
4º	Motoristas, polícias, cozinheiros (operários especializados) (com ensino primário completo)	
5º	Jornaleiros, mandaretas, ajudantes de cozinha, mulheres de limpeza, trabalhadores manuais ou operários não especializados	

#### O Nível de instrução

Grau	Condições	Opção
1º	Ensino universitário ou equivalente (+ de 12 anos de estudo)	
2º	Ensino médio ou técnico superior (10 a 11 anos de estudo)	
3º	Ensino médio ou técnico inferior (6 a 9 anos de estudo)	
4º	Ensino primário completo (6 anos de estudo)	
5º	Ensino primário incompleto ou nulo	

#### Fontes de rendimento familiar

Grau	Condições	Opção
1º	A fonte principal é a fortuna herdada ou adquirida	
2º	Os rendimentos consistem em lucros de empresas, altos honorários, lugares bem remunerados	
3º	Os rendimentos correspondem a um vencimento mensal fixo, tipo funcionário público	
4º	Os rendimentos resultam de salários, ou seja remuneração por semana, por jornada, por horas ou à tarefa	
5º	São sustentados pela beneficência pública ou privada. Não se incluem neste grupo as pensões de desemprego ou de incapacidades para o trabalho	

### Conforto do alojamento

Grau	Condições	Opção
1º	Casa ou andares luxuosos e muito grandes, oferecendo aos seus moradores o máximo de conforto	
2º	Categoria intermédia, casas ou andares que sem serem luxuosos, são, não obstante espaçosas e confortáveis	
3º	Casas ou andares modestos, bem construídos e em bom estado de conservação, bem iluminadas e arejadas, com cozinha e casa de banho	
4º	Categoria intermédia entre 3 e 5	
5º	Alojamento impróprio para uma vida decente, choças, barracas ou andares desprovidos de todo o conforto, ventilação, iluminação ou também aqueles onde moram demasiadas pessoas em promiscuidade	

### Aspecto do bairro habitado

Grau	Condições	Opção
1º	Bairro residencial elegante, onde o valor dos terrenos ou o aluguer são elevados	
2º	Bairro residencial bom, de ruas largas com casas confortáveis e bem conservadas	
3º	Bairro em rua comercial ou estreitas e antigas, com casas de aspecto geral menos confortável	
4º	Bairro operário, populoso, mal arejado ou bairro em que o valor do terreno esta diminuído como consequência da proximidade de fabricas, etc.	
5º	Bairro de lata	

## 2- CLASSIFICAÇÃO SOCIAL

A soma total dos pontos obtidos na classificação dos cinco critérios dá-nos uma pontuação final que corresponde à classe social. Conforme a classificação que se segue:

<b>Classe I</b>	Famílias cuja soma de pontos vai de	5 a 9	<b>Classe Alta</b>
<b>Classe II</b>	Famílias cuja soma de pontos vai de	10 a 13	<b>Classe Média Alta</b>
<b>Classe III</b>	Famílias cuja soma de pontos vai de	14 a 17	<b>Classe Média</b>
<b>Classe IV</b>	Famílias cuja soma de pontos vai de	18 a 21	<b>Classe Baixa</b>
<b>Classe V</b>	Famílias cuja soma de pontos vai de	22 a 25	<b>Classe Desfavorecida</b>

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**Appendix V – Family Support Scale**

## ESCALA DE AVALIAÇÃO DO APOIO SOCIAL À FAMÍLIA

Código do Bebê: \_\_\_\_\_ Data recolha de dados: \_\_\_\_/\_\_\_\_/\_\_\_\_\_

<b>Que ajuda lhe têm dado cada uma das seguintes pessoas ou grupos na tarefa de criar o(s) seu(s) filho(s)</b>	Não disponível	Não ajuda	Por vezes ajuda	Geralmente ajuda	Ajuda muito	Ajuda imenso
1. Meus pais	ND	1	2	3	4	5
2. Os pais do meu cônjuge (ou companheiro)	ND	1	2	3	4	5
3. Meus parentes	ND	1	2	3	4	5
4. Os parentes do meu cônjuge (ou companheiro)	ND	1	2	3	4	5
5. Cônjuge (ou companheiro)	ND	1	2	3	4	5
6. Meus amigos	ND	1	2	3	4	5
7. Ao amigo do meu cônjuge (ou companheiro)	ND	1	2	3	4	5
8. Os meus filhos	ND	1	2	3	4	5
9. Vizinhos	ND	1	2	3	4	5
10. Outros pais	ND	1	2	3	4	5
11. Colegas de trabalho	ND	1	2	3	4	5
12. Grupos de pais	ND	1	2	3	4	5
13. Grupos sociais/Clubes	ND	1	2	3	4	5
14. Membros da igreja/padres	ND	1	2	3	4	5
15. Médico de família ou da criança	ND	1	2	3	4	5
16. Programa de intervenção precoce (se aplicável)	ND	1	2	3	4	5
17. Creche/Jardim-de-infância	ND	1	2	3	4	5
18. Profissionais (Assistentes Sociais, Terapeutas, Educadoras, etc.)	ND	1	2	3	4	5
19. Serviços (Saúde, Serviços Sociais, Saúde Mental, etc.)	ND	1	2	3	4	5

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## **Appendix VI – CARE-Index**

**CARE – INDEX**  
Score Form: Item Scores

Age \_\_\_\_\_ Characteristics \_\_\_\_\_ Code \_\_\_\_\_

**Facial Exp.**    **Vocal Exp.**    **Position**    **Affection**    **Turn-taking**    **Control**    **Activity**

Caregiver

1 2a 2b 3    4 5a 5b 6    7 8 9    10 11a 11b 12    13 14 15    16 17 18    19 20 21

Sensitive \_\_\_\_\_ Controlling (Cover [a] \_\_\_\_\_ Overt [b] \_\_\_\_\_) Total \_\_\_\_\_ Unresponsive \_\_\_\_\_

**Infant**

1 2c 2d 3    4 5c 5d 6    7 8c 8d 9    10 11c 11d 12    13 14c 14d 15    16 17c 17d 18    19 20c 20d 21

Cooperative \_\_\_\_\_ Compulsive (CC \_\_\_\_\_ CA \_\_\_\_\_ CG \_\_\_\_\_) Total [c] \_\_\_\_\_ Dificult [d] \_\_\_\_\_ Passive \_\_\_\_\_

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**Appendix VII – Temperament Scale**

## ESCALA DO TEMPERAMENTO DO BEBÉ

Código da criança:

Idade da criança (meses):

Data de recolha de dados:

Gostaríamos de conhecer as reacções do seu filho. Por isso, assinale em que medida as frases propostas estão de acordo com o comportamento do seu filho.

O meu filho	Quase nunca		Algumas vezes		Muitas vezes		Quase sempre
1. Quando quer alguma coisa leva sempre a dele avante	1	2	3	4	5	6	7
2. Acorda durante a noite	1	2	3	4	5	6	7
3. Sossega facilmente com um brinquedo	1	2	3	4	5	6	7
4. É difícil de alimentar (só come comida batida/ralada ou só come o que quer e quando quer ou prefere petiscar)	1	2	3	4	5	6	7
5. Só consegue adormecer ao colo	1	2	3	4	5	6	7
6. Pára de chorar quando se fala para ele	1	2	3	4	5	6	7
7. Adormece e acorda sensivelmente às mesmas horas	1	2	3	4	5	6	7
8. Cooperava quando é vestido ou despido (dá os braços)	1	2	3	4	5	6	7
9. Chora exageradamente quando é contrariado	1	2	3	4	5	6	7

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**Appendix VIII - The Parent-Caregiver Relationship Scale**

## Escala de satisfação na relação pais-enfermeiros

### Versão Pais

1. Acredito que o enfermeiro(a) do meu filho/minha filha me informará de tudo o que é importante acerca da saúde dele(a).

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Discordo totalmente</b>	<b>Discordo</b>	<b>Concordo parcialmente</b>	<b>Concordo</b>	<b>Concordo totalmente</b>

2. Quando existe um problema eu e o enfermeiro(a) do meu filho/minha filha conversamos sobre o mesmo de forma imediata.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Discordo totalmente</b>	<b>Discordo</b>	<b>Concordo parcialmente</b>	<b>Concordo</b>	<b>Concordo totalmente</b>

3. Eu valorizo muito as opiniões do enfermeiro(a) do meu filho/minha filha na maioria dos assuntos.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Discordo totalmente</b>	<b>Discordo</b>	<b>Concordo parcialmente</b>	<b>Concordo</b>	<b>Concordo totalmente</b>

4. Eu sinto que o enfermeiro(a) do meu filho/minha filha se preocupa genuinamente com ele(a).

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Discordo totalmente</b>	<b>Discordo</b>	<b>Concordo parcialmente</b>	<b>Concordo</b>	<b>Concordo totalmente</b>

5. Posso confiar no enfermeiro(a) do meu filho/minha filha.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Discordo totalmente</b>	<b>Discordo</b>	<b>Concordo parcialmente</b>	<b>Concordo</b>	<b>Concordo totalmente</b>

6. Eu e o enfermeiro(a) do meu filho/minha filha raramente discutimos assuntos relacionados com o cuidado dele(a).

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Discordo totalmente</b>	<b>Discordo</b>	<b>Concordo parcialmente</b>	<b>Concordo</b>	<b>Concordo totalmente</b>

7. Eu tenho grande respeito pessoal pelo enfermeiro(a) do meu filho/minha filha.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Discordo totalmente</b>	<b>Discordo</b>	<b>Concordo parcialmente</b>	<b>Concordo</b>	<b>Concordo totalmente</b>

8. O(A) enfermeiro(a) do meu filho/minha filha é sobretudo uma pessoa carinhosa.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Discordo totalmente</b>	<b>Discordo</b>	<b>Concordo parcialmente</b>	<b>Concordo</b>	<b>Concordo totalmente</b>

9. O(A) enfermeiro(a) do meu filho/minha filha tem os conhecimentos e as competências necessárias para ser um bom enfermeiro(a).

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Discordo totalmente</b>	<b>Discordo</b>	<b>Concordo parcialmente</b>	<b>Concordo</b>	<b>Concordo totalmente</b>

10. Eu gosto de trabalhar com o(a) enfermeiro(a) de forma a conseguir conhecer melhor o que se passa com a saúde e desenvolvimento o meu filho/minha filha.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Discordo totalmente</b>	<b>Discordo</b>	<b>Concordo parcialmente</b>	<b>Concordo</b>	<b>Concordo totalmente</b>

11. Eu e o(a) enfermeiro(a) do meu filho/minha filha estamos quase sempre de acordo sobre como cuidá-lo(a) ou lidar com ele(a).

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Discordo totalmente</b>	<b>Discordo</b>	<b>Concordo parcialmente</b>	<b>Concordo</b>	<b>Concordo totalmente</b>

13. Por vezes tenho receio que o(a) enfermeiro(a) do meu filho/minha filha discuta sobre os meus assuntos pessoais com outras pessoas.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Discordo totalmente</b>	<b>Discordo</b>	<b>Concordo parcialmente</b>	<b>Concordo</b>	<b>Concordo totalmente</b>

14. A minha comunicação com o(a) enfermeiro(a) do meu filho/minha filha é sempre aberta e honesta.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Discordo totalmente</b>	<b>Discordo</b>	<b>Concordo parcialmente</b>	<b>Concordo</b>	<b>Concordo totalmente</b>

15. Eu e o(a) enfermeiro(a) do meu filho/minha filha valorizamos a nossa relação.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Discordo totalmente</b>	<b>Discordo</b>	<b>Concordo parcialmente</b>	<b>Concordo</b>	<b>Concordo totalmente</b>

16. O(A) enfermeiro(a) do meu filho/minha filha raramente se lembra de quem eu sou.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Discordo totalmente</b>	<b>Discordo</b>	<b>Concordo parcialmente</b>	<b>Concordo</b>	<b>Concordo totalmente</b>

17. O(A) enfermeiro(a) do meu filho/minha filha não tem os conhecimentos acerca do desenvolvimento da criança que eu gostaria que tivesse.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Discordo totalmente</b>	<b>Discordo</b>	<b>Concordo parcialmente</b>	<b>Concordo</b>	<b>Concordo totalmente</b>

18. Quando eu e o(a) enfermeiro(a) do meu filho/minha filha temos um problema, normalmente não o discutimos.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Discordo totalmente</b>	<b>Discordo</b>	<b>Concordo parcialmente</b>	<b>Concordo</b>	<b>Concordo totalmente</b>

19. Eu sinto que eu e o(a) enfermeiro(a) do meu filho/minha filha temos valores diferentes sobre a melhor forma de atender às suas necessidades.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Discordo totalmente</b>	<b>Discordo</b>	<b>Concordo parcialmente</b>	<b>Concordo</b>	<b>Concordo totalmente</b>

20. Eu interesso-me pelo bem-estar do(a) enfermeiro(a) do meu filho/minha filha.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Discordo totalmente</b>	<b>Discordo</b>	<b>Concordo parcialmente</b>	<b>Concordo</b>	<b>Concordo totalmente</b>

21. Eu sei que o meu filho/minha filha realmente gosta de estar com o(a) seu/sua enfermeiro(a).

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Discordo totalmente</b>	<b>Discordo</b>	<b>Concordo parcialmente</b>	<b>Concordo</b>	<b>Concordo totalmente</b>

22. Eu confio sempre que o(a) enfermeiro(a) do meu filho/minha filha cuida dele(a) da melhor maneira e de forma consistente.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Discordo totalmente</b>	<b>Discordo</b>	<b>Concordo parcialmente</b>	<b>Concordo</b>	<b>Concordo totalmente</b>

23. Por vezes, eu não levo em consideração as opiniões do(a) enfermeiro(a) do meu filho/minha filha em matérias de saúde, especialmente quando estamos em desacordo.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Discordo totalmente</b>	<b>Discordo</b>	<b>Concordo parcialmente</b>	<b>Concordo</b>	<b>Concordo totalmente</b>

24. Sei que o(a) enfermeiro(a) do meu filho/minha filha virá em minha ajuda quando eu precisar, mesmo que para isso tenha que alterar os seus planos.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Discordo totalmente</b>	<b>Discordo</b>	<b>Concordo parcialmente</b>	<b>Concordo</b>	<b>Concordo totalmente</b>

25. O(A) enfermeiro(a) do meu filho/minha filha dá-me sugestões e conselhos, válidos, sobre como lidar com ele(a).

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Discordo totalmente</b>	<b>Discordo</b>	<b>Concordo parcialmente</b>	<b>Concordo</b>	<b>Concordo totalmente</b>

26. Eu considero que o(a) enfermeiro(a) do meu filho/minha filha é um verdadeiro parceiro na sua saúde.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Discordo totalmente</b>	<b>Discordo</b>	<b>Concordo parcialmente</b>	<b>Concordo</b>	<b>Concordo totalmente</b>

27. Normalmente concordo com a forma que o(a) enfermeiro(a) do meu filho/minha filha escolhe para lidar com o seu mau comportamento.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Discordo totalmente</b>	<b>Discordo</b>	<b>Concordo parcialmente</b>	<b>Concordo</b>	<b>Concordo totalmente</b>

28. Eu realmente gosto do(a) enfermeiro(a) do meu filho/minha filha e gosto de estar com ele(a).

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Discordo totalmente</b>	<b>Discordo</b>	<b>Concordo parcialmente</b>	<b>Concordo</b>	<b>Concordo totalmente</b>

30. Eu admiro a forma como o(a) enfermeiro(a) do meu filho/minha filha cuida dele(a).

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Discordo totalmente</b>	<b>Discordo</b>	<b>Concordo parcialmente</b>	<b>Concordo</b>	<b>Concordo totalmente</b>

31. Se o(a) enfermeiro(a) do meu filho/minha filha tivesse um problema eu faria um esforço adicional para o tentar ajudar.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Discordo totalmente</b>	<b>Discordo</b>	<b>Concordo parcialmente</b>	<b>Concordo</b>	<b>Concordo totalmente</b>

32. Acredito que o(a) enfermeiro(a) do meu filho/minha filha sabe bastante sobre como cuidar de crianças.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Discordo totalmente</b>	<b>Discordo</b>	<b>Concordo parcialmente</b>	<b>Concordo</b>	<b>Concordo totalmente</b>

33. Eu penso que o(a) enfermeiro(a) do meu filho/minha filha é um(a) profissional que presta cuidados e não um parceiro, igual, na sua saúde.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Discordo totalmente</b>	<b>Discordo</b>	<b>Concordo parcialmente</b>	<b>Concordo</b>	<b>Concordo totalmente</b>

34. Eu penso que o(a) enfermeiro(a) do meu filho/minha filha é alguém que atende crianças pequenas e não um profissional com competências específicas na área da Saúde Infantil.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Discordo totalmente</b>	<b>Discordo</b>	<b>Concordo parcialmente</b>	<b>Concordo</b>	<b>Concordo totalmente</b>

No verso desta folha, por favor escreva os seus comentários acerca deste questionário e/ou acerca da sua relação com a enfermeira do seu filho.

**O QUESTIONÁRIO CHEGOU AO FIM. MUITO OBRIGADO.**

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**Appendix IX – Ethical considerations – Check-list**

**ETHICAL CONSIDERATIONS – CHECK-LIST**  
 (Based on the Ethics Checklist of the Fundação para a Ciência e a Tecnologia – FCT)

**The use of human embryonic stem cells (hESC)**

Specific considerations,  
Page

- Does the proposed research involve human embryos?  Yes  No
- Does the proposed research involve human foetal tissues/cells?  Yes  No
- Does the proposed research involve hESC?  Yes  No
- Does the proposed research involve hESC lines?  Yes  No
- Does the proposed research on hESC involve the derivation of cells from Embryos?  Yes  No

**Research on human beings**

- Does the proposed research involve children?  Yes  No p. 56, 105, 128
- Does the proposed research involve patients?  Yes  No
- Does the proposed research involve persons not able to give consent?  Yes  No (Children)  
p. 56, 105, 128
- Does the proposed research involve adult healthy volunteers?  Yes  No
- Does the proposed research involve human genetic material?  Yes  No
- Does the proposed research involve human biological samples?  Yes  No
- Does the proposed research involve human data collection?  Yes  No p. 56, 105, 128

**Privacy and human data collection**

- Does the proposed research involve processing of genetic information or personal data (e.g. health, sexual lifestyle, ethnicity, political opinion, religious or philosophical conviction)?  Yes  No p. 56, 105, 128
- Does the proposed research involve tracking the location or observation of people?  Yes  No p. 56, 105, 128

**ETHICAL CONSIDERATIONS – CHECK-LIST**  
(Based on the Ethics Checklist of the Fundação para a Ciência e a Tecnologia – FCT)

**Research on animals**

- Does the proposed research involve research on animals?       Yes     No
- Are those animals transgenic small laboratory animals?       Yes     No
- Are those animals transgenic farm animals?       Yes     No
- Are those animals non-human primates?       Yes     No
- Are those animals cloned farm animals?       Yes     No

**Research in developing countries**

- Does the proposed research involve the use of local resources (genetic, animal, plant, etc)?       Yes     No
- Is the proposed research of benefit to local communities (e.g. capacity building, access to healthcare, education, etc)?       Yes     No

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**Appendix X – Study approval**

DELIBERADO, DADA A OBRIGATORIEDADE DE  
CONFIDENCIALIDADE RELACIONADA À INFORMAÇÃO  
PESSOAL DOS UTENTES, NÃO SENDO POSSÍVEL FORNECER  
A LISTAGEM, FIDELICIDADES INFORMAR DE NOTA DISPONIBILIDADE  
PARA SE CONFERIR COM OS UTENTES AVENÇADA DO SEU INTERESSE  
E PARTICIPAR NO ESTUDO, ENCAMINHANDO  
PARA A ENFA HÉLIA SOARES.

En. C.S.A. / 2011 - 2531  
221 - 6019

Exma. Sra.

Presidente do Conselho de Administração do  
Centro de Saúde de Angra do Heroísmo

2011/06/01 Srta  
Acta nº 25 Fátima.

Hélia Maria Soares, portadora do cartão de cidadão nº 11941910, residente no Caminho dos Diabretes, 38 Terra-Chã, contacto telefónico 962556944, aluna do Doutoramento em Ciências de Enfermagem no Instituto de Ciências Biomédicas Abel Salazar, venho, por este meio, solicitar a V/Exa. autorização para que seja facultada a listagem das crianças nascidas a partir de Junho de 2010 (inclusive), que façam vigilância de saúde na VI Instituição e que obedeçam aos seguintes critérios:

a) crianças de termo e prematuras (32-36 semanas), clinicamente saudáveis, em famílias que não estejam identificadas como grupo de risco ou em situação de risco.

Este pedido prende-se com a elaboração da Tese de Doutoramento que tem como objectivo avaliar o impacto da intervenção clínica de enfermagem, através da metodologia *Touchpoints*, no comportamento interactivo mãe-filho e no desenvolvimento entre o 1º e o 2º ano de vida da criança.

Solicito, desde já, que me seja concedida autorização para realizar o meu estudo na VI Instituição, agradecendo a atenção dispensada e disponibilizando-me para qualquer informação adicional considerada oportuna.

Grata pela atenção dispensada e com os melhores cumprimentos,

Pede deferimento,

Hélia Maria Soares

Angra do Heroísmo, \_\_\_ Maio 2011

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**Appendix XI – Informed consent document**

Curso de Doutoramento em Ciências de Enfermagem

### **Consentimento informado**

Eu, \_\_\_\_\_(nome) concordo em participar no estudo que tem como objectivos: caracterizar sócio-demograficamente as famílias; identificar as necessidades e recursos das famílias; estudar o desenvolvimento infantil entre o primeiro e o segundo ano de vida; estudar a relação enfermeiros-pais-criança.

- Compreendo que tenho o direito de colocar, agora ou durante o desenvolvimento do estudo, qualquer questão acerca do mesmo;
- Informaram-me acerca dos procedimentos metodológicos;
- Aceito que os dados recolhidos sejam analisados pela equipa de investigação;
- Compreendi que o meu anonimato será sempre protegido e que nenhum nome ou outros detalhes identificativos serão divulgados;
- Compreendo que sou livre de desistir do estudo a qualquer momento;
- Pelo presente documento consinto em participar plenamente neste estudo.

**Assinatura do participante.....**

**Assinatura do investigador.....**

(contacto telefónico: 962556944)

**Data:...../...../.....**