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**Parenting and climate change:
What are parents' perceived
roles and worries?**

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Universidade do Minho
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University of Minho, June 05, 2023

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Parentalidade e alterações climáticas: Qual é a perceção dos pais sobre os seus papéis e preocupações?

Resumo

A atual crise climática desafia a parentalidade devido ao seu impacto negativo no futuro das crianças e adolescentes. Estudos anteriores, centrados na parentalidade e nas alterações climáticas, analisaram as preocupações dos pais, os comportamentos de mitigação das alterações climáticas e as suas relações com os comportamentos dos seus filhos. No entanto, quais são as percepções espontâneas dos pais sobre os seus papéis e preocupações neste contexto? O presente estudo tem como objetivo explorar as percepções dos pais sobre os seus papéis e preocupações através de uma entrevista semiestruturada. Os participantes foram 29 pais de adolescentes com idades compreendidas entre os 10 e os 11 anos. Para minimizar um potencial enviesamento, a primeira parte da entrevista incluiu questões gerais sobre a parentalidade, enquanto que a segunda parte se centrou em questões específicas sobre a parentalidade e as alterações climáticas. Os dados foram analisados através de uma análise de conteúdo, seguindo uma abordagem dedutiva. Os resultados indicaram que os pais não percepcionaram espontaneamente a educação dos filhos sobre questões ambientais como parte das suas funções parentais, nem expressaram espontaneamente as alterações climáticas como uma preocupação parental. No entanto, na segunda parte da entrevista, mais de metade dos participantes referiu estar preocupado e envolvido em ações de eco treino e modelação. Apesar desta preocupação e envolvimento, os resultados sugerem que as alterações climáticas não parecem ser atualmente consideradas como uma prioridade nos papéis parentais percebidos pelos participantes. Neste estudo são ainda apresentadas implicações para a investigação e a prática.

Palavras-chave: Alterações climáticas; Eco-parentalidade; Estudo qualitativo; Papel parental; Preocupação parental.

Parenting and climate change: What are parents' perceived roles and worries?

Abstract

The current climate crisis challenges parenting due to its negative impact on children's future. Prior studies, focused on parenting and climate change, analyzed parental worries, climate change mitigation behaviors and their relationships to children's behaviors. However, what are parents' spontaneous perceptions of their roles and worries in this context? The current study aims to explore parents' perceptions of their roles and worries through a semi-structured interview. Participants were 29 parents of early adolescents aged 10 to 11 years. To minimize potential biases, the first part of the interview encompassed general questions about parenting, while the second part focused on specific questions about parenting and climate change. Data were analyzed through content analysis, following a deductive approach. Findings indicated that parents did not spontaneously perceive educating their children about environmental issues as part of their parental roles nor spontaneously express climate change as a parental worry. Nevertheless, in the second part of the interview, more than half of the participants reported being worried and involved in eco-training and modeling. Despite this worry and involvement, results suggest that climate change seems not currently viewed as a main priority of the participating parents' perceived roles. Implications for research and practice are provided.

Contents

Index of tables

Parenting and climate change: What are parents' perceived roles and worries?

The importance of parents in the development and education of their children is undeniable. Parents primary role is to meet their children's needs (Mowder & Shamah, 2009) while ensuring their physical and intellectual integrity until they reach the maturity and helping them face the adversities of their environment autonomously (Ceka & Murati, 2016). Parental roles encompass activities ensuring children's care, control, and development (Hoghughi, 2004). Among these activities, the literature highlights the following as relevant: meeting the child's basic needs, promoting emotional well-being, guiding children's behavior, setting boundaries, teaching useful life skills through communication and modeling, and supporting education and moral guidance involving beliefs and discussions about important topics (e.g., ethics in relationships, gender roles, politics, war, climate change, and caring for the environment) (e.g., Sanders & Morawska, 2018).

Parental roles are related to parental self-perception, which refers to how individuals view their parent's role and include several characteristics, such as feeling competent when exercising the parental role, feeling involved in the care of children, experiencing a sense of satisfaction with caregiving relationships, and balancing parental roles with other roles (Bornstein et al., 2003). Analyzing the parental role through parental perception provides valuable indicators of how parents evaluate their performance as parents (Coleman & Karraker, 2003). Studies about parents' self-perceptions of the parenting role point out that parents' beliefs about how they perform their role influence parenting practices and children's development (Coleman & Karraker, 2003; Shumow & Lomax, 2002; Wang et al., 2022;). This prior research denotes the importance of parental cognition in parental practices.

Furthermore, other studies about parental role have investigated the satisfaction of the parents while fulfilling their parental role (Akaroğlu, 2022; Cho & Ryu, 2022; Fashi & Ghiasi, 2018; Yang et al., 2020), and the conception of parents regarding their role in the education of their children (e.g., Cunha et al., 2015; Russell, 1991). However, to our knowledge, parents' perceptions of their role in the current times, highlighting climate change as a serious global issue, has received little attention from researchers. This study is particularly relevant given that time-related context and parent perceptions regarding their role and worries are examples of factors that influence parenting behaviors, and consequently children's behaviors (Algarvio & Leal, 2016; Coleman & Karraker, 1998). Hence, the current study, grounded on Parental Development Theory (PDT; Mowder, 2005) and the Ecological Model of Human Development

(EMHD; Bronfenbrenner, 1994), aims to map parents' perceived roles and worries in the current time of climate crisis that needs urgent action from all counterparts to protect the planet for the next generation (UNICEF, 2015).

Theoretical Frameworks

As previously mentioned, two theoretical frameworks undergird the current study: PDT (Mowder, 2005) and the EMHD (Bronfenbrenner, 1994). The PDT is a theoretical framework that provides an important contribution to the study of parenting, as it focuses on parents' cognition (i.e., their perceptions) and behaviors. According to Mowder (2005), it is fundamental to further understand the parental role since it influences parents' perceptions and practices. The parental role is defined by six characteristics: bonding (i.e., showing positive affect on the child), discipline (e.g., implementing rules), education (e.g., advising and being a role model), general welfare and protection (i.e., to assure that the child's needs are met and to protect from harm), responsivity (e.g., assisting and supporting their child when needed), and sensitivity (e.g., ensuring a "match" between the parent's response and the child's need), (Mowder, 2005). In addition, how parents interact with their children throughout their stages has a lasting impact on the child's development and future behavior (Respler-Herman et al., 2011). Therefore, the PDT emphasizes the importance of responsive and supportive parenting practices in promoting healthy child development, as parenting behaviors, attitudes, and styles have a significant impact on children's development and future behavior (Respler-Herman et al., 2011).

The parental role is constantly affected by several contextual factors. These factors may include, the parents' childhood experiences, their experience of becoming a parent, their partner, their extended family members, and the social and cultural context in which they live (Mowder, 2005). Thus, these contextual factors represent important elements for analyzing parental roles.

To deepen the knowledge about the extent of contextual factors in parental role practice, the current study benefits from the contribution of the EMHD (Bronfenbrenner, 1994). This model helps to understand parenting behavior through a broader perspective (Sanders & Morawska, 2018) by explaining the interaction between individuals and their context. According to Bronfenbrenner (1994), five systems are interconnected and influence each other: 1) Microsystem; 2) Mesosystem; 3) Exosystem; 4) Macrosystem and 5) Chronosystem. The Microsystem represents the interactions between the person and the environment in a place in which the participants play activities and roles (e.g., parents raising their children). The

Mesosystem, in turn, is characterized by the interactions between the microsystems (e.g., the interaction between the parents and school). The Exosystem represents the extension of the mesosystem and embraces other social structures (e.g., the mass media, agencies of government) that influence the functioning of the micro-, and mesosystem. The Macrosystem encompasses all the broader elements (e.g., attitudes, ideology) that set the functioning of the micro-, meso-, and exosystem, by influencing their beliefs, perceptions, and activities. Finally, the Chronosystem refers to the time-related changes that one may experience (e.g., period related to moving house or school, historic events, climate change) that have implications for their parenting behaviors. The Micro and Chrono systems are central to the current study as we aim to explore parental roles and worries at a time when we are already facing climate change.

Climate Change Worries and the Parental Role

Overall, parents play the primary role of protecting their children from possible risks (Kelley et al., 1998). Thus, to ensure that they play their role properly, parents become worried about several factors that may harm their children (Algarvio et al., 2013). The concept of parental worry, as defined by Fisak et al. (2012), encompasses concerns about uncertain circumstances that could impact their children's well-being, including aspects such as health, safety, education, social life, and future prospects. Within these worries, apprehension about climate change emerges as a significant issue due to its implications for future generations (Ekholm & Olofsson, 2017).

Aspects related to worrying about the future and attempts to imagine the impacts caused by climate change require a great cognitive effort due to the load associated with reflecting on uncertain aspects (Gaziulusoy, 2020). This cognitive effort may impact the family dynamics because parental cognitions influence parents' conceptions of their behaviors, parenting decisions, and children's behavior (Sanders & Morawska, 2018). Therefore, it is crucial to understand how this worry has influenced parental roles and family dynamics, prompting parents to adopt pro-environmental behaviors. These behaviors, in turn, can influence children to engage in similar actions, as parental pro-environmental behavior serves as a significant predictor of children's pro-environmental behavior (Collado et al., 2019; Grønhøj & Thøgersen, 2009; Lawson et al., 2019; Matthies et al., 2012).

Given this strong relationship between parents' attitudes and behaviors and those of their children; Grønhøj and Thøgersen (2012) sought to find out to what extent adolescents' everyday

pro-environmental behavior is related to their attitudes or is a product of social influence within the family. Moreover, these authors analyzed whether, parenting style (especially that which supports autonomy and youth attitudes) predicts of adolescents' pro-environmental behavior. Findings indicate that parental behaviors explain adolescents' behavior, however, parenting styles do not seem to influence youth behavior with respect to dominant family norms. These results highlight the role of parental behavior in shaping children's behavior and the importance of the intention to educate children about climate change (Grønhøj & Thøgersen, 2012).

According to the UNICEF report, (2015) the education of children on the issue of the climate crisis is associated with an increase in their capacity to adapt and be agents of change while promoting environmental management. Thus, it is proposed that, for this to occur, support must be provided for the growth of children's awareness, knowledge, skills, and engagement regarding the promotion of environmental sustainability (UNICEF, 2015). Following Collado et al. (2019) we defend that, parents are one of the most powerful sources for educating children about environmental responsibilities.

"Green parents" cultivate and encourage environmentally friendly values and practices. The parents are likely to practice "eco-parenting", also known as "green parenting." (Nche et al., 2019). Eco-parenting includes the following: 1) Training children in environmental ethics and mitigation and adaptation strategies; 2) Seeking/buying ecologically friendly products/food, and 3) Modeling pro-environmental behavior (Nche et al., 2019). Thus, the third axis of eco-parenting implies that parents intend to educate through their behaviors. This is in accordance with the PDT model (Mowder, 2005) defending that, parents can shape their children's behavior through their actions.

Given that the climate crisis is largely due to human actions, it is a moral and ethical demand to make a commitment to seek to mitigate and teach mitigation strategies (Nche et al., 2019). So, through raising environmentally aware and committed children, parents are contributing to helping shape a generation of citizens engaged in solutions to mitigate the sources of the climate crisis (Nche et al., 2019).

Study purpose

As previously mentioned, parents' perceptions about their roles have a major influence on their parenting behaviors (Mowder, 2005). Additionally, climate change, as an external factor

beyond parental control, can raise worries about the future well-being of their children (Ekholm & Olofsson, 2017).

Despite growing research focused on parenting and climate change (e.g., Collado et al., 2019; Grønhøj & Thøgersen, 2009, 2012; Lawson et al., 2019; Matthies et al., 2012), parents' perceptions of the experience of parenting in times of climate crisis have not yet been widely explored. To our knowledge, just one study examined these aspects through interviews with 12 parents of children aged 0 to 15 years (Gaziulusoy, 2020). The author explored the experience of parents raising children amidst the challenges posed by climate change. In this study, individuals reported experiencing feelings of worry, sadness, hopelessness, and anxiety when thinking about their children's future. Parents exhibited diverse approaches to discuss climate change with their children. Some initiated conversations through inquiry, while others focused on explaining specific concepts or enforcing environmentally friendly practices. Other parents aimed to instill moral responsibility through regular discussions. Furthermore, parents reported feelings of guilt and compromised integrity, as they perceived themselves as unable to fully model ideal behaviors in addressing climate change.

Notwithstanding the contribution of these findings, it is crucial to acknowledge that the study by Gaziulusoy (2020) was conducted with parents who already displayed concern about the climate crisis. As a result, their study did not delve into whether parents, in general, consider the climate crisis in their parenting roles and worries.

To address these gaps, the current study investigated the spontaneous perceptions of parental roles and worries in a non-purposeful sample. To achieve this goal, the study includes parents unaware that the topic of climate change would be discussed during the interview. The objective of this approach is to facilitate the exploration of parents' spontaneous perceptions of their roles and worries; and learn whether they integrate climate change into their parenting practices. This holds great significance as parental perceptions and practices possess the potential to influence children's behavior (Algarvio & Leal, 2016; Coleman & Karraker, 1998) who are particularly vulnerable to the effects of climate change (Heffernan et al., 2023) and constitute the future generation of adults.

Parents of early adolescents (10-14 years old) were invited to participate in the study, given that this developmental stage represents a critical period during which adolescents actively engage in the revision and consolidation of their worldviews (Harker-Schuch, 2019). By selecting

parents with children within this age cohort, the primary objective of this study is to deepen our understanding of how parents, acting as potential agents of change, effectively discharge their crucial role in nurturing and guiding their children over this critical phase of opinion formation and establishment of their societal role (Harker-Schuch, 2019).

Method

All procedures were carried out to comply with ethical principles. The project was approved by the Ethics Committee of the University of Minho. The Ministry of Education allowed data collection at the school.

Participants

Recruitment took place through two modes, via online dissemination and face-to-face in a school close to the university. The criterion for participation was to be a parent of early adolescents (10-14 years old). The general objectives and procedures as well as the informed consent were presented to the parents. In addition, parents were informed about the confidentiality of the data and voluntary participation. Of the parents who were contacted at school, 37 signed the informed consent. Of those, 26 participants enrolled in the interview. Five participants were recruited online and signed an informed consent agreeing to participate in the study, however, only three were interviewed. Finally, participants were 29 parents (86.2% mothers) aged between 35 and 49 ($M =$ 42.24, $SD =$ 4.18). Sixteen percent of parents completed middle school, 28% high school, and 56% higher education. The children of these parents were less than 11 years old (see Table 1). However, due to the purpose of the present study, the research team asked the participants to provide answers regarding their children aged between 10 and 14 years old. Forty percent of the families were eligible to free or reduced lunch prices for their children in school.

Table 1

Parents' demographic information

Code	Age	Gender	Parent education	Number of children and their ages	Eligible for free or reduced lunch prices
1EQ	44	Female	Master's degree	2 children (4 and 10 years)	No
2EQ	-	Female	-	3 children (7, 12 and 18 years)	-
3EQ	44	Female	12th grade	1 child (11 years)	No
4EQ	39	Female	12th grade	2 children (7 and 11 years)	Yes
6EQ	46	Male	Graduation	1 child (11 years)	No
7EQ	47	Female	Graduation	2 children (8 and 11 years)	No

Code	Age	Gender	Parent education	Number of children and their ages	Eligible for free or reduced lunch prices
8EQ	39	Female	Master's degree	3 children (2 months, 9 years and 12 years)	No
9EQ	48	Female	9th grade	3 children (6, 8 and 11 years)	No
10EQ	41	Female	9th grade	2 children (11 and 19 years)	Yes
11EQ	45	Female	Master's degree	2 children (5 and 11 years)	No
12EQ	41	Female	Master's degree	2 children (10 and 12 years)	Yes
14EQ	36	Female	12th grade	2 children (7 and 11 years)	Yes
15EQ	45	Female	Graduation	2 children (6 and 10 years)	No
16EQ	-	Female	-	2 children (10 and 18)	-
17EQ	49	Female	Graduation	2 children (10 and 13 years)	No
19EQ	35	Female	9th grade	1 child (11 years)	No
20EQ	39	Female	9th grade	2 children (5 and 10 years)	Yes
21EQ	42	Female	Graduation	2 children (11 and 16 years)	Yes
25EQ	44	Female	12th grade	2 children (11 and 17 years)	No
26EQ	-	Female	-	2 children (11 and 18 years)	-
27EQ	41	Female	12th grade	2 children (11 and 13 years)	Yes
28EQ	39	Female	12th grade	3 children (10, 11 and 16 years)	Yes
30EQ	49	Male	Graduation	2 children (8 and 11 years)	No
32EQ	41	Female	Graduation	3 children (10, 13 and 15 years)	Yes
33EQ*	36	Female	12th grade	2 children (9 and 11 years)	No
34EQ	40	Male	Graduation	2 children (6 and 10 years)	Yes
35EQ	-	Female	-	-	-
38EQ*	48	Male	Graduation	1 child (11 years)	No
39EQ*	38	Female	Graduation	1 child (11 years)	No

Note. – Not reported. *Participants recruited online.

Although there is no rigid rule to determine the number of participants in qualitative studies, some authors propose an average number of participants to be considered according to the research objectives and research paradigm. This study relies on a number of participants congruent with the proposal by Warren (2002) within the range of 20 to 30, seeking to ensure sufficient diversity and data saturation (e.g., Baker & Edwards, 2012).

Data collection

Data were collected through interviews with parents based on a semi-structured script. The interview was structured in two parts to reduce the results bias. The first part of the interview contains general questions about parenting, including its roles and worries (see Table 2). In the second part of the interview, participants were invited to reflect on the topic of climate change (see Table 2) and parenthood.

Table 2
Research questions

General questions	1.	In your opinion, what are parental roles?
	2.	What worries do you have as a parent?
Specific questions	3.	What do you think when you hear the term "climate change"?
	4.	As a parent in times of climate crisis, do you usually do anything in your daily life to try to diminish this problem? If yes, please, provide some examples?
	4.1.	For what reasons do you adopt these behaviors?
	4.2.	To what extent do you think this is important for your children? And do you usually involve them? How do you do it?

The interviews were recorded upon the participants' consent and labeled with the date of the interview and a code for each participant. At the end of the interview, participants were allowed to provide additional information. In addition, they were asked to complete an online questionnaire with sociodemographic data. Participants were instructed to use the assigned code when filling out the questionnaire to ensure confidentiality.

Data Analysis

The NVIVO software assisted data analysis. Content analysis was used to analyze the interview transcript data. This type of analysis consists of a qualitative research technique to identify categories, using systematic procedures (Bardin, 1996). Content analysis followed three main steps (Bardin, 1996): 1) reading the interview transcript to get an overall analysis of the data, 2) coding the data, following a deductive approach (e.g., parenting roles), and 3) processing and interpreting the data from inference (e.g., comparing frequencies and coded categories).

The participants' responses were coded using the previously defined codebook (see Table 3) grounded on the PPT (Mowder, 2005) and Eco-Parenting (Nche et al., 2019) theoretical

models, and on parental worries literature. The categories regarding parenting roles were education, responsivity, general welfare and protection, bonding, sensitivity, and discipline (Mowder, 2005). Eco-parenting theory (Nche et al., 2019) allowed the identification of three subcategories fitting within the education category: eco training, eco seeking/buying and eco modeling. The category named parental worries was included considering the wide range of parents' concerns (Fisak et al., 2012) as codes (see Table 3). This category encompasses the common topics parents used to express worries concerning their children. Within this category, a subcategory was developed specifically for climate change worries (e.g., Lawson et al., 2019) given the purpose of the current study (see Table 3). General worry about climate change as an environmental problem and its consequences both for the general population and for future generations including their children. It is important to note that the coding used in this study is not mutually exclusive, meaning that certain information may fit into more than one category and subcategory.

Table 3

Codebook

Category *Description*	Subcategory *Description*	Example(s)
Bonding *"affection, love, and regard parents feel and display toward their children. (...) positive affect of the parent toward the child" (Mowder, 2005, p. 51)*		e.g., "that's an inherent situation of being a parent (...) loving them unconditionally" (6EQ)
Discipline *"discipline involves indications of setting limits or establishing rules, and specific parental responses to child behavior."* *(Mowder, 2005, p. 51)*		e.g., "[setting time for cell phone use] 1, 2 hours maximum per day and that's already exaggerated and only after homework and the tasks that they have to do, tidy up the laundry or help their sister with whatever is needed." (28EQ)

Category *Description*	Subcategory *Description*	Example(s)
Education *"parental transmission of information to inform children. (...) includes educating, guiding, and teaching children. Examples of education include activities such as advising, being a role model, counseling, preparing and showing by example."* (Mowder, 2005, p. 51)	Eco Training *Transmitting to their children, environmental ethical values, as well as climate change mitigation and adaptation strategies (e.g., value for animal species, value for plants and water, sustainable behaviors, proper garbage disposal, saving electricity, feeding locally, avoiding making fires and use of bicycles) (Nche et al., 2019).*	e.g., "and if we're talking in terms of my mission as a mother, it's effectively teaching her to use energy efficiently, with less waste and use of water." (39EQ)
	Eco Seeking/Buying *Seek/buy eco-friendly products (e.g., toys and clothes) or fresh food (e.g., fruits and vegetables) to offer to children (Nche et al., 2019).*	e.g., "(...) we always bring our meals in reusable containers. The water bottle is also always a reusable bottle that she brings to school." (39EQ)
	Eco Modeling *Modeling pro-environmental behavior by being actively involved in pro-environmental activities. Parents educate their children via observable action, communication, and engagement rather than presuming their children would learn from parents without a deliberative intention (Nche et al., 2019).*	e.g., "(...) I do plogging, I do a lot of things. And I try to encourage that to my son. (...) A lot of times [the son] goes with me to take the trash, too. (...) and a lot of times also when we go to the beach (...) we pick up trash." (6EQ)
General welfare and protection *"parents assure that their children are protected from harm and that children's general needs, such as adequate clothing, food, shelter, temperature and water are met."* (Mowder, 2005, p. 51)		e.g., "prepare the lunchbox, but more basic daily routine things, (...) make dinner, give them a bath, put them to bed (...) take care of the clothes...washing, drying, those daily tasks." (15EQ)
Responsivity *"the extent to which parents respond to their children. This means that a parent, for instance, hears, sees, or in some other way perceives that the child needs something and the parent makes a response to the child's call for assistance."* (Mowder, 2005, p. 51) *"for example, helping, assisting, bringing up, encouraging and supporting children"* (Mowder, 2005, p. 51)		e.g., "he's entering a phase where he needs to talk a little bit, right? And I besides being his mother, I try to be a little bit of her friend too and I try to talk to him because my son is very reserved." (19EQ)

Category *Description*	Subcategory *Description*	Example(s)
Sensitivity *"the ability of the parent to discern what the child is communicating and matching the parent response to the child's need." (Mowder 2005, p.52)* *"for example, indications of respecting, understanding, comforting, and responding to a child's specific need" (Mowder 2005, p.52)*		e.g., "(...) if they don't feel like it, because they're already tired from a day at school, and studying and assignments, and they have even more work, I'm able to give in and say: 'ok, you're not going to the training." (17EQ)
Parental worries *Parental worry about potential negative outcomes or harm in relation to their children. This can include a wide range of concerns, such as their children's safety, health, education, social life, and future prospects (Fisak et al., 2012).*	Climate change worries *General worry about climate change as an environmental problem and its consequences both for the general population and for future generations including their children (e.g., Lawson et al., 2019).*	e.g., "(...) we already see some changes, but I worry as a mother, what's going to be the rest of his life, right? With all these changes." (19EQ)

Results

The current study explored the perceived parenting roles and worries during an era of climate change. To minimize bias, initial phase of the interview was focused on general questions about parenting roles and worries. Specific questions regarding parenting and climate change were explored in the subsequent phase. Therefore, findings reflect data collected on these two distinct parts of the interviews. Data pattern is reported in this section, considering the number of cases by each category and subcategory (see Table 4).

Table 4

Summary of findings

Category	Subcategory	Number of participants (%)
Education		29 (100%)
	Eco Training	28 (96.5%)
	Eco modeling	16 (55%)
	Eco Seeking/Buying	5 (17%)
Responsivity		26 (89.6%)
General welfare and protection		25 (86.2%)
Discipline		24 (82.7%)

Category	Subcategory	Number of participants (%)
Bonding		16 (55%)
Sensitivity		15 (51.7%)
Parental worries		29 (100%)
	Climate Change worries	20 (68.9%)

Parental roles and worries

The initial phase of the interview focused on participants' perceptions of parental roles and worries, revealing that 100% of the participants emphasized the paramount importance of education within the parental role. One parent clearly illustrated this idea:

"Parents must educate, right? They must teach their children, not to rely on others to take care of their education. I believe it's the most important role, even more important than school. School is important, but parents must teach their children at home." (28EQ).

In this initial part of the interview, one parent besides reinforcing the responsibility to educate, specified that this education also involves the transmission of environmental awareness (eco training). This participant expressed their belief in the responsibility of preparing their child and instilling a sense of social responsibility, creating an awareness of social and environmental challenges not only within their own country but also on a global scale.

Building upon the notion of responsivity, a significant proportion of parents recognized the importance of identifying and addressing their children's individual needs (e.g., "There are, sometimes, these reactions... You see that she is down and sad. I ask her, she answer that it's nothing, I believe the opposite, but I try to respect it", 10EQ). This aspect (responsivity) emerged as a crucial component of the parental role, with 89.6% of participants acknowledging its significance. This finding highlights the dynamic nature of parenting, wherein parents must adapt their approach to meet the needs of their children throughout their development.

Ensuring the general welfare and protection of their children emerged as another major category within the parental role (e.g., "ensuring that children have optimal conditions to grow up healthy and providing them with a safe and comfortable environment that helps them grow happy", 12EQ). Eighty-six percent of participants expressed the importance of creating optimal conditions for their children's growth, emphasizing the provision of a safe and nurturing environment. This finding underscores parents' role in safeguarding their children's well-being and fostering an environment conducive to their physical, emotional, and social development.

Discipline was considered a crucial aspect of the parental role, as highlighted by 82.7% of the participants. Parents recognized the importance of implementing rules to guide their children's behavior, instill values, and shape their moral development. This aspect reflects parents' commitment to provide structure and set boundaries contributing to their children's overall growth and well-being.

The category of bonding, encompassing the expression of positive affection, was mentioned by 55% of the participants. These parents emphasized the significance of maintaining a strong emotional connection with their children, emphasizing love and affection as foundational elements of the parental role, (e.g., "I believe that that's the role of a father and mother, always be there for him, it's about love and affection", 32EQ). This finding highlights the vital role of nurturing and supportive relationships in fostering children's emotional development and well-being.

Lastly, the category of sensitivity emerged as an important component of the parental role, with 51.7% of participants mentioning its relevance. Parents recognized the need to be attuned to their children's emotional experiences and responsive to their unique challenges (e.g., "When she was in the third grade and started saying 'I can't do math, I don't want to do math,'. She set math aside, and as I couldn't keep up with teaching her math, she took private lessons", 20EQ). This finding reflects parents' awareness of their children's needs and willingness to address and support their children through difficulties.

In the initial phase of the interview, parents were also asked about their prevalent worries as a parent, and a diverse range of worries were reported. All parents engaged in expressing their apprehensions, which encompassed various aspects within the category of parental worries. One significant focal point among parents' worries revolved around the well-being and safety of their children. Parents emphasized factors such as the absence of injuries, particularly during the crucial stage of adolescence when curiosity drives exploration, (e.g., "(...) [the worry relates to well-being] if they have not incurred any injuries. At this stage [adolescence], there is an increased responsibility, isn't there? Adolescence brings about a desire to explore everything that is new", 27EQ)

Worries related to external influences and information also emerged prominently. Parents expressed worry about the potential impact of friends who could lead their children toward inappropriate behaviors, underscoring the importance of peer relationships and the potential

20

risks associated with negative influences, as this quotation illustrates: "Influences from friends who may lead them to try things they shouldn't. Perhaps not now, but maybe in the future" (33EQ).

The future of their children constituted another prevalent source of worry for parents. The current circumstances and uncertainties surrounding employment and independent lives were highlighted, reflecting parental apprehension about adequately preparing their children for the challenges they may encounter as they navigate adulthood, as the following quotation illustrates:

"As parents, given our current circumstances, I am greatly concerned about how things will be. I am uncertain about the situation when they need employment or when they need to pursue their own lives. This is a great worry" (7EQ).

Parents also mentioned worrying about fulfilling the role of being a good parent, particularly regarding education. Anxiety about providing appropriate education and the fear of making mistakes in this critical aspect of their children's development was apparent. Parents grappled with self-doubt and questioned their efficacy in meeting the educational needs of their children (e.g., "education is a worry. I fear that I may not be providing the appropriate education, despite my earnest desire to avoid failure. I am afraid of making mistakes. Did I do well? Did I not?", 20EQ).

The impact of electronics and screen usage on cognitive development emerged as a distinct concern among parents. Participants expressed worry about the challenges posed by the pervasive presence of technology in contemporary times and its potential consequences for their children's cognitive abilities (e.g., "lately, I have been greatly concerned about the challenges we face in the present times with electronics and screens, and how this affects the cognitive development of children", 12EQ).

Parents also feared that their children could face hardships or situations they are unaware of (e.g., "(...) What has been troubling me the most is the possibility of my child going through something [hardship], some issue at school that I am unaware of. She may not feel comfortable enough to confide in me or seek my advice, and I may fail to perceive it", 8EQ). The inability to fully perceive and address their children's challenges or provide the necessary support created a sense of worry and unease within parents.

21

Time management also emerged as a pressing worry, with parents grappling with limited time to spend with their children due to work commitments and personal obligations. The challenge of balancing responsibilities and ensuring quality time with their children weighed on parents' minds.

Lastly, meeting their children's demand for attention constituted a significant concern for parents. Sibling dynamics and jealousy surfaced as factors affecting the emotional well-being of their children. Parents expressed the need to manage emotions and address their children's differing levels of attention and perceived disparities.

Parental roles and worries regarding Climate Change

In the second phase of the interview, parents were specifically asked to share their perspectives on climate change. Ninety-seven percent of participants highlighted their commitment to raising awareness and imparting strategies for both adapting to and mitigating the effects of climate change (eco training). Their efforts included various practices such as promoting environmental responsibility regarding recycling, water conservation, and conscientious energy consumption (e.g., "we try to instill environmental responsibility, namely the need for recycling, waste separation, not wasting water...etc., etc., and energy consumption, because to produce it we also need water resources",15EQ).

Furthermore, more than half of the participants (68.9%) expressed genuine worries about climate change. They voiced distress over the rapid deterioration of the planet's condition and the perceived lack of collective action and political will to address this pressing issue (e.g., "I am very worried, you know? The rapid degradation of the situation on the planet and the lack of social mobilization or political will to change this fate. So, I view the current scenario with great concern", 12EQ). Some parents felt a strong sense of responsibility, attributing the need for change to themselves and emphasizing the importance of instilling environmentally conscious values in their children (e.g., "It scares me, well, I won't say it doesn't, it scares me, and I think we are the ones to blame, and that it should start with us, the changes, it should start with us, and as mothers, we should instill in our children [the will] to do the right things (...)", 4EQ). In addition, parents also mentioned worrying about certain events that future generations might face (e.g., hunger, lack of water, pollution, lack of wildlife, floods, droughts, exposure to sun and cold). For these reasons, some participants even questioned why they had children in a time of crisis

and wonder whether the next generations would forgive them for leaving the planet as it is "(...) How will they find this? Will they ever forgive us?" (6EQ).

Regarding the intentional educational practices aimed at fostering pro-environmental behaviors in their children (eco-modeling), about half of the participants (55%) recognized the significance of serving as role models by actively engaging in sustainable actions. For instance, they shared their experiences of involving their children in waste separation, recycling routines, and even demonstrating personal responsibility by picking up litter in public spaces:

"I instill this in my daughter, at least the part about separating waste, she has been doing it since she was little, and she goes to the recycling bins with me, she takes part in the separation. Now she knows, but I have always instilled this in her since she was little. And, for example, if we go to the beach and see litter that it's not mine, if we see trash, I pick it up and try to instill that in her" (3EQ).

Lastly, a smaller subset of 5 parents (17%) reported their deliberate efforts to seek and purchase eco-friendly products (eco-seeking/buying). They demonstrated their commitment to sustainability by opting for products that offer refills or reduced environmental impact (e.g., "(...) she uses a shampoo that allows you to buy refills, so we have the container, and then we buy the refill, which can be used to refill the container (...) they take the reusable bottles with water to school", 1EQ).

Discussion

This study aimed to examine the spontaneous perceptions of parental roles and worries in the context of a climate crisis. To achieve this goal, a two-phase interview structure was employed to elicit spontaneous answers.

During the initial phase of the interview, just one parent spontaneously mentioned that climate change formed a part of their parental role, specifically regarding the education of their children on environmental awareness (eco training). However, none of the parents spontaneously mentioned climate change as being part of their parental worries.

These findings do not necessarily indicate that parents are unworried about climate change or do not incorporate it into their parenting roles. However, they suggest that climate change may not be regarded as a main priority within the multitude of worries and responsibilities parents face. This analysis aligns with the conclusions of Gaziulusoy (2020), who

23

found that while parents express worries regarding climate change, they may not have a specific educational agenda focused on climate change.

In the second phase of the interview, most parents acknowledged the significance of environmental education and actively incorporated it into their daily lives, primarily through eco training and modeling. According to the parents' responses, their educational efforts focused on teaching children about recycling, reducing water and electricity consumption, and minimizing waste, with fewer mentions of transportation and food choices. However, existing literature emphasizes that certain behaviors, such as reducing car usage, avoiding air travel during family vacations, and adopting a plant-based diet, have a more substantial impact in mitigating climate change compared to commonly promoted strategies like recycling or changing lightbulbs (Wynes & Nicholas, 2017). Therefore, the content of parents' environmental education may not align with the most effective actions for mitigating climate change.

Current findings highlight the need for disseminating up-to-date environmental information to empower parents in educating their children more effectively. To address this, it is important to implement initiatives that provide parents with access to current environmental knowledge in an accessible way. These initiatives could be carried out through school-or community-based projects, aiming to integrate eco-parenting behaviors with higher impact at mitigating climate change into the existing ones without overwhelming parents. It is crucial to use accessible language and consider the diverse backgrounds of families to ensure effective communication and engagement. By promoting such initiatives, parents can enhance their ability to educate their children about climate change and actively contribute to sustainable practices in their everyday lives.

Limitations and Future Research

While the current study on parenting has made significant contributions to literature, it is important to acknowledge its limitations. Firstly, a major limitation arises from the fact that most participants were selected through convenience sampling, leading to an imbalance in participant characteristics such as age, education, and income. Furthermore, the study lacked control over certain important factors, such as the clinical or psychological characteristics of the children, which could potentially influence the roles and concerns of parents (Loukisas & Papoudi, 2016; Norberg & Steneby, 2009). To address these limitations, future research endeavors could increase the participant pool and carefully examine the relationship between participant attributes

(such as education, and income) and specific characteristics of children, thereby obtaining a more comprehensive understanding of parenting dynamics.

Moreover, parents might not explicitly articulate all the roles they consider important or actually undertake when reflecting on their parental responsibilities. This highlights the significance of conducting follow-up interviews and employing other data collection methods (e.g., diaries) in future studies to gather such data and gain a deeper understanding of parental perceptions. By following diverse approaches, we can enhance our knowledge about parental perception, which, in turn, has implications for parenting practices (Mowder, 2005).

Lastly, future research could incorporate children's perspectives about their parents' roles. By including the viewpoints of both parents and children, this analysis would provide an additional source of information and facilitate a more comprehensive discussion on parental behaviors (Lawson et al., 2019).

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