

Attachment style and prenatal expectations from a Bayesian perspective

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Abstract

Background: The transition to motherhood is sometimes characterized by ambivalent emotions. This paper attempts to explore whether this transition may be triggering attachment insecurities in first-time pregnant women during their first trimester, and thus affecting their prenatal expectations and caregiving representations. **Method:** A sample of 100 first-time pregnant women during their first trimester was studied. Prenatal expectations were explored in terms of desire to have children (DTC), perceived ability to relate to children (PARC), personal meaning ascribed to motherhood, and preoccupations regarding becoming a mother. **Results:** The estimated Bayesian network shows that attachment style is a predictor for prenatal expectations, either directly or indirectly. Results also suggest that PARC mediates the relationship between attachment and the preoccupations related to motherhood. Pregnant women with an insecure attachment style reported lower PARC and higher preoccupations about becoming a mother. **Conclusion:** Pregnant women with secure attachment have more positive pre-parenthood expectations and parenting representations than those with insecure attachment. These results may be useful in clinical settings to help women have a smoother transition to motherhood.

Keywords: attachment style, parenting representations, prenatal expectations, bayesian models, caregiving system.

Resumen

Estilo de apego y expectativas prenatales desde una aproximación bayesiana. **Antecedentes:** la transición hacia la maternidad está caracterizada en algunos casos por emociones ambivalentes. Este artículo trata de explorar si esta transición puede desencadenar inseguridad en el apego de mujeres embarazadas primerizas durante su primer trimestre, y esto afecta las expectativas prenatales y las representaciones de cuidado. **Método:** una muestra de 100 mujeres embarazadas primerizas fue estudiada durante el primer trimestre. Las expectativas prenatales fueron exploradas en términos de deseo de tener niños (DTC), habilidad percibida para relacionarse con niños (PARC), sentido atribuido a la maternidad y preocupaciones relacionadas con ser madre. **Resultados:** la red bayesiana estimada muestra que el estilo de apego predice las expectativas prenatales, tanto directa como indirectamente. Los resultados también sugieren que PARC media la relación entre apego y las preocupaciones hacia la maternidad. Las mujeres embarazadas con un estilo de apego inseguro reportan menor PARC y mayores preocupaciones relacionadas con convertirse en madres. **Conclusiones:** las mujeres embarazadas con apego seguro tienen expectativas prenatales y representaciones parentales más positivas que aquellas con apego inseguro. Estos resultados pueden ser útiles en situaciones clínicas para ayudar a que las mujeres tengan una transición más satisfactoria a la maternidad.

Palabras clave: estilo de apego, representaciones parentales, expectativas prenatales, modelos bayesianos, sistema de cuidado.

Life transitions are phases rich in depth, layers, and implications. They represent new experiences that require adaptation, and likely some self-exploration. The transition to motherhood is one of those significant times that may come with great joy as well as novel challenges. With the exception of puberty, pregnancy causes hormonal and physical changes with greater notable psychological impact than any other life event. This phase of life among first-time mothers needs to be explored through relevant lens of theoretical constructs in an attempt to better understand the factors

affecting *the parent's mental representation of what it means to be a caregiver* (i.e., Parenting Representations, PR) (Mayseless, 2006). From an attachment perspective, the parent's internal world of parenting representations is also known as the "Caregiving Behavioural System" (CBS) (Bowlby, 1969, 1988).

CBS reaches its highest development during the transition to parenthood (i.e., during pregnancy, birth, and the months following childbirth). In this transition, the woman is moving from being someone who is *seeking care* from her own attachment figures, to someone who will be *providing care* to her own baby in the near future (i.e., she is becoming an attachment figure herself). As a result, this phase puts "care-seeking" and "caregiving" systems in direct contrast (Heard & Lake, 2012).

The literature highlights the role of the mother-daughter relationship, which is re-triggered as the daughter is becoming a mother herself (Ballou, 1978; Siddiqui, Hagglof, & Eisemann,

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2000). Due to this period of development, pregnant women and new parents commonly experience a remarkable increase in “thoughts, doubts, and worries about the self as a parent, the spouse, and the past” (George & Solomon, 2008, p. 839). Ilicali & Fisek (2004) suggest that this is an essential process for the mother’s re-organization of self in this period. The process of attachment starts forming during pregnancy (Siddiqui et al., 2000). However, unfortunately, while the ‘attachment system’ is a thoroughly studied construct in research, the literature is not extensive when it comes to the ‘caregiving system’.

While most women become mothers, little research has explored the psychological and prenatal factors that affect this subjective experience, motivations behind it, as well as its association with parenting stress later on (Gerson, 1980; Mazzeschi, Pazzagli, Radi, Raspa, & Buratta, 2015). Moreover, even though expectations and beliefs about parenthood may be highly affected by one’s experience with his/her own parents (George & Solomon, 2008), the literature is limited in exploring this topic (Scharf & Rousseau, 2017). The relationship between the transition to parenthood, parenting representations, attachment style, and intergenerational transmission of attachment is surprisingly rare (Rholes, Simpson, & Friedman, 2006) and inconsistent (Conway, 2014). According to attachment theory (Bowlby, 1980; Bretherton, 1985), parent’s relationship with their children can be mediated by their own past experiences with attachment figures. During pregnancy, parenting representations refer to beliefs, perceptions, and expectations regarding parenthood in general, and oneself as a parent in particular. Different studies refer to this concept using many terminologies, including ‘parenting buds’, ‘prenatal expectations’, ‘caregiving representations’, and ‘working models of parenthood’. Unfortunately, the literature regarding parenting representations during pregnancy is much less common than studies done on participants who do not have children (Scharf & Maysel, 2011). Not only the caregiving system reaches its maturity during this phase (George & Solomon, 2008; Solomon & George, 1996), it is also closer to the phase of actual parenting. Therefore, perceptions, beliefs, and expectations at this stage are very important. Prenatal attitudes can predict, to a large extent, postnatal maternal adjustment, which directly relates to the baby’s well-being and overall development (Brenning, Soenens, & Vansteenkiste, 2015; Carli, Tagini, Sarracino, Santona, & Parolin, 2016). In addition, stressful situations and life transitions (e.g., being pregnant) may tend to activate one’s attachment system and trigger particular insecurities during this phase (Bowlby, 1988).

The period of pregnancy is highly subjective and can be experienced very differently from a woman to another. Insecure women undergoing pregnancy generally feel more stressed, exhibit more negative orientations towards their unborn baby, report lower mental health and higher dissatisfaction with their body image, and frequently think about the challenges of becoming a parent (Taubman - Ben-Ari, Shlomo, Sivan, & Dolizki, 2009; Wilson, Rholes, Simpson, & Tran, 2007; Shaver, Mikulincer, & Cassidy, 2018). The literature suggests that avoidant expectant women feel less close to their prenatal babies, do not think about them frequently, and experience lower levels of prenatal bonding with the baby in the third trimester (Priel & Besser, 2000). They also find it difficult to seek help from their partners during this challenging time (Rholes, Simpson, Campbell, & Grich, 2001). In fact, they seem to reject their partners and exhibit overly self-reliant strategies at times (Conway, 2014).

As for anxious expectant mothers, they have lower levels of psychological well-being during pregnancy and may rely on emotion-based defence mechanisms throughout this time (Mikulincer & Florian, 1999). Also, they seem to experience prenatal jealousy as they feel threatened that the baby will take their partner’s time and attention (Wilson et al., 2007). As they tend to demand attention for themselves and excessively fear abandonment, these thoughts may trigger insecurities they have. In addition, anxious women perceive less support from their partners during pregnancy, which ends up making them even more anxious and more attuned to any threats to their relationship (Simpson, Rholes, Campbell, Tran, & Wilson, 2003; Simpson, Rholes, Campbell, & Wilson, 2003). Taubman - Ben-Ari et al. (2009) suggest that attachment-related concerns held during pregnancy continue throughout motherhood as well. Anxious individuals are caught up in depressive thoughts and lower perceived relationship satisfaction (Ortiz, Gómez, & Apodaca, 2002). These thoughts seem to continue even after the child is born. As for avoidant individuals, they have thoughts of lack of emotional closeness to the baby, negative expectations of parenthood as overly stressful and their children as too difficult (Priel & Besser, 2000; Rholes et al., 2006; Wilson et al., 2007). Generally, insecure attachment seems to predispose women to more negative parenting representations and more negative mothering behaviour – either in actual parent-child interactions (Conway, 2014; Rholes et al., 1995) or even in simulated parenting situations (Symons, Adams & Smith, 2016).

The objective of this study is to explore how attachment style might be associated with certain attitudes towards pregnancy and the transition to motherhood, which is the starting bud of a future parent-child relationship. This study hypothesized that there will be a distinction between parenting representations of individuals having a secure and insecure attachment styles. It was predicted that secure expectant mothers would have a higher desire to have children (DTC), higher perceived ability to relate to children (PARC), lower preoccupations, and lower negative meaning associated with motherhood than insecure expectant mothers. Higher relationship satisfaction was also predicted to be related to positive parenting representations. Specifically, it is hypothesized that insecure attachment may be associated with factors that predispose individuals to a more challenging orientation to the transition to parenthood (i.e., they either feel less competent or are less committed to the parental role than others). In other words, insecure individuals have internalized a negative perception of themselves as parents (e.g., low PARC), which may lead to more negative parenting representations. Thus, it is hypothesized that PARC may act as a mediator between attachment style and other prenatal expectations (i.e., meaning of motherhood, and preoccupations related to becoming a mother). This research controlled for relationship satisfaction with one’s partner.

Method

Participants

The sample consisted of 100 participants, who ranged in age from 16 to 43 years old ($M = 28.82$, $SD = 5.78$). First-time pregnant women, more specifically from the beginning until the 4th month of their pregnancy, were recruited from the Hospital Clínico Universitario Virgen de la Arrixaca (Murcia, Spain). Seventy five % of women were working when the study was carried out and

their household income was lower than 1,000 Euros in 19% of the cases, ranged from 1,000 to 3,000 Euros in 73% of the cases and ranged between 3,000 and 5,000 Euros in the remaining 8% of the cases. Most women had finished some type of formal education (52% university studies, 35% secondary studies and 10% primary studies) whereas only 3% of the women reported dropping out of school. Inclusion criteria entailed having a low-risk pregnancy, natural conception, being Spanish, having a partner, not having a medical condition that may affect the pregnancy, and not having experienced any pregnancy complications so far. Those who knew they were expecting twins or that their baby may have a disability were excluded from the study, so as to ensure that these factors do not account for variations in findings. Fourteen of the participants had an insecure attachment while 85 had a secure attachment (one participant did not answer this question).

Instruments

Pen-and-paper survey was designed including questions related to demographic information (age, income level, education level and working status), relationship satisfaction with one's partner (measured on a Likert scale from 1 to 6, the highest level of satisfaction being 6), attachment style, desire to have children, perceived ability to relate to children, meaning ascribed to motherhood and pregnancy preoccupations.

Attachment style was measured by the Relationship Questionnaire (RQ), a brief 4-item measure of attachment style developed by Bartholomew & Horowitz (1991). It is based on Bowlby's definition of internal working models (Bartholomew & Shaver, 1998; Bowlby, 1973; Griffin & Bartholomew, 1994). It presents the respondent with four brief paragraphs, each describing a pattern of attachment (i.e., attitude in close relationships). The current study combined preoccupied, dismissing and fearful attachment styles into an "insecure attachment" category to highlight the distinction between secure and insecure attachment styles. The RQ tool is extensively used in the literature as it is easy to administer and relies on a solid theoretical construct. A cross-cultural study used this self-report measure across 62 cultural regions (Schmitt et al., 2004). Several studies have demonstrated adequate psychometric properties for the RQ (Brennan, Clark, & Shaver, 1998; Scharfe & Bartholomew, 1994). In addition, insecure attachment style scores on the RQ show a significant correlation with insecure attachment style scores on the Experiences in Close Relationships scale (ECR) (Brennan et al., 1998). Another study of 840 college students showed that attachment styles measured on the RQ and Hazan & Shaver's attachment measure (1987) were statistically related (Bartholomew & Shaver, 1998). The current study uses the Spanish version of the RQ in Schmitt et al.'s study (2004).

The Desire to Have Children scale (DTC) was developed in 1997 by Rholes, Simpson, & Blakely to be used in a parenthood questionnaire ($\alpha = .90$). It was administered to mothers of children aged 24 to 48 months (Rholes et al., 1995), college students (Rholes, Simpson, Blakely, Lanigan, & Allen, 1997), pregnant women (Rholes, Simpson, & Friedman, 2006), and in a longitudinal study to emerging adults (Scharf & Maysseless, 2011). This scale consists of 12 items, five of which are reverse-scored. The answers range from "totally agree" (6) to "totally disagree" (0). The score is calculated by adding up all the items after adjusting the reverse items (i.e., 5 items). The higher the score, the higher the desire to

have children. The observed internal consistency for the scale in this study was $\alpha = .75$ (95% CI = .72, .77).

Perceived Ability to Relate to Children scale (PARC) was originally developed in the study conducted by Rholes et al. in 1997 ($\alpha = .88$). It consists of 11 items, relating to one's comfort with children and one's expectation of becoming a good parent, 10 items are reverse-scored. The scale is significantly correlated with several aspects related to parenthood in different contexts (Bjorgo, 2003; Conway, 2014; Rholes et al., 1997; Scharf & Maysseless, 2011; Scharf & Rousseau, 2017). The higher the final score, the higher the perceived ability to relate to children. In this study, we used a version of the PARC and DTC scales developed by following the International Test Commission Guidelines (Muñiz, Elosua, & Hambleton, 2013; Muñiz & Hambleton, 1996). The observed internal consistency coefficient for the PARC scale in this study was $\alpha = .81$ (95% CI = .79, .83).

Meaning ascribed to motherhood was asked in an open-ended question, where the participant was asked to write – in her own words – what it means for her to become a mother for the first time. Two professional psychotherapists independently content-coded the responses of the question and separately identified general themes emerging from the responses. Both reached a consensus of six general themes (1: positive experiences, 2: giving love and nurturance, 3: creation and continuity, 4: fulfilment, 5: responsibility and commitment, and 6: negative emotions). Only the sixth category was considered as a negative meaning ascribed to motherhood.

The Pregnancy Preoccupations Scale (PPS) was developed for the purpose of this study. It consists of 14 preoccupations that pregnant women may have at some point regarding pregnancy and the transition to parenthood. They are mostly related to attachment issues (e.g., if the baby will love her, if she will be a good mother). Anxiety is normal and can even be adaptive in stressful situations. However, excessive worries can be harmful to both the mother and unborn child (Moreno-Rosset, Arnal-Rémon, Antequera-Jurado, & Ramírez-Uclés, 2016). Therefore, the participant is only required to rate from 0 to 6 whether she *excessively* has each of the prenatal concerns. The score is calculated by adding up the rating of each question, and the maximum score is 84. The higher the score, the more the pregnant woman has excessive preoccupations regarding pregnancy and/or the transition to motherhood. In this study, the PPS had good internal consistency ($\alpha = .87$, 95% CI = .86, .88).

Procedure

Participants were asked to take part in the study during their routine consultation visit in the 12th week of pregnancy by filling out a 10-15-minute questionnaire. This study used purposive convenience sampling, since the main focus of the research lies in a particular phase of pregnancy in first-time expectant mothers.

Participants were first given an information sheet that briefly explains the general aim of the study. The information sheet also emphasized that there are no right or wrong answers, and that the woman should choose the response that *best* describes her. This is done as an attempt to decrease social desirability bias in terms of how they "should" be feeling about their pregnancy. Then, the participants were asked to sign the informed consent form which stipulates their willingness to participate. The information

sheet, informed consent and the questionnaire were administered by the same researcher to prevent interviewer error variance. A standardised introduction protocol was used by the researcher to introduce the study to potential participants. Data collection was carried out in the same waiting room to control environment effects.

Participation in the study was completely voluntary. It did not have any implications on the woman's receipt of services from her health care provider originally targeted. Financial compensation was not used to recruit the participants as they volunteer their time. Participants were able to withdraw at any point in the study, without having to explain their reasons. Other than the probability of discomfort or asking about possibly unpleasant relationships or feelings, there were no foreseeable risks that were expected to ensue. Confidentiality of results was guaranteed to the participants. The research was approved by both The Ethical Committees of the Hospital Clínico Universitario Virgen de la Arrixaca and the UCAM Universidad Católica de Murcia.

Data analysis

Descriptive statistics, classical p-values and Bayes factors favouring the alternative hypothesis (BF_{10}) were computed with the JASP software (version 0.9, JASP Team, 2018). To compute Bayes factors, the default prior distribution ($r = 1$) suggested by Rouder, Speckman, Sun, & Morey (2009) was used because it has been shown that this prior has desired balanced properties in simulation studies (Jeon & De Boeck, 2017). The Bayes factors were interpreted as evidence in sample data favouring the classical alternative hypothesis against the null by following the intervals suggested by Jeffreys (1948). A Bayes factor between 1 and 3 was considered anecdotal evidence for H_1 compared to H_0 , from 3 to 10 was considered substantial evidence, from 10 to 30 strong evidence, from 30 to 100 very strong evidence and higher than 100 decisive evidence favouring the alternative hypothesis. The version 4.4.7 of the mediation package (Imai, Keele, Tingley, & Yamamoto, 2010, 2011; Tingley, Yamamoto, Hirose, Keele, & Imai, 2014) for R was used to estimate the average direct and mediation effects in two theoretically relevant models by using 1000 nonparametric bootstrapped samples. In both models, PARC was considered as a mediating variable between attachment style and negative meaning of motherhood (model 1) and preoccupations ascribed to motherhood (model 2). Relationship satisfaction, DTC, preoccupations (in model 1) and negative meaning of motherhood (in model 2) effects were held constant in the mediation models. To further explore the relationship between variables in the context of exploratory analysis (Nosek, Ebersole, DeHaven, & Mellor, 2018), we used the tabu algorithm (Nagarajan, Scutari, & Lèbre, 2013; Scutari, 2010; Scutari & Denis, 2014) implemented in the bnlearn

package (version 4.4.1) for R to search for the best Bayesian network representing observed data. The Bayesian Information Criterion was the statistic to be minimized and the blacklist functionality was used to forbid unnatural or illogical links. Cases with missing data in target variables (eight) were excluded when building graph and mediation models. Processed data and source code are available online: <https://osf.io/qsgud>.

Results

As can be seen in Table 1, participants with secure attachment obtained higher scores in relationship satisfaction ($U = 436.5$, $p = .004$, unilateral contrast, $r_s = .27$), DTC ($t(97) = -1.76$, $p = .04$, unilateral contrast, $d = 0.51$) and PARC ($t(97) = -4.38$, $p < .001$, unilateral contrast, $d = 1.26$), as opposed to participants with insecure attachment who scored higher on preoccupations ($t(97) = 3.87$, $p < .001$, unilateral contrast, $d = 1.12$).

Table 2 shows that attachment is related positively to relationship satisfaction, DTC, and PARC, and negatively to preoccupations and negative meaning ascribed to motherhood. It can be seen that the relationships between attachment and relationship satisfaction, PARC and preoccupations are greater than the rest, and all are statistically significant. In all those cases, Bayes Factors can be considered very strong or decisive (Jeffreys, 1948) when comparing the no-relation and the relation hypothesis. That is to say, our data are more congruent with the hypotheses of relationship between variables against the hypothesis of no relationship.

The average causal mediation effect estimated for model 1 – which considers PARC as a mediation variable between attachment and negative meaning ascribed to motherhood – does not yield significant results. However, the average causal mediation effect estimated for model 2 which tested the mediating effect that PARC has in preoccupations was statistically significant. As it can be seen in Table 3, a proportion of .56 of the observed total causal effect can be explained by PARC in the mediation model which considers this variable as mediating the relationship between attachment style and preoccupations.

In Figure 1, the causal Bayesian network estimated by the tabu algorithm is depicted. As can be seen, all the analysed variables depend, directly or indirectly, on attachment style. It is also shown that the negative meaning ascribed to motherhood depends on relationship satisfaction, and preoccupations. The estimated Bayesian network shows that PARC is a mediating variable between attachment style and negative meaning (model 1). Preoccupations and DTC also mediate the effect between PARC and negative meaning. The second tested mediation model (model 2) appeared in the tabu estimation as a subgraph of the estimated model.

Table 1
Prenatal expectations descriptives

	RST		DTC		PARC		PREOC	
	M	SD	M	SD	M	SD	M	SD
Insecure	5.29	1.14	49.36	12.37	47.50	10.99	33.79	4.08
Secure	5.86	0.47	54.40	9.49	57.94	7.76	19.66	1.32

Note: RST: relationship satisfaction, DTC: desire to have children, PARC: perceived ability to relate to children, PREOC: preoccupations about motherhood

Table 2
Correlation coefficients and classical p-values (lower left triangle), Bayes Factors favouring the alternative hypothesis (BF_{10}), Bayesian credibility intervals (upper right triangle) and descriptive statistics (right columns)

	ATT	RST	DTC	PARC	PREOC	NM	M	SD	S	K
ATT	—	.39.53 [.13 : .48]	1.08 [-.02 : .36]	1327.15 [.22 : .55]	232.43 [-.52 : -.18]	0.59 [-.33 : .06]	.86	.35	-2.03	2.13
RST	.32 <.001	—	177.95 [.17 : .51]	0.50 [-.07 : .31]	0.19 [-.24 : .15]	4.42 [-.43 : -.05]	5.78	0.64	-3.21	9.88
DTC	.18 .041	.36 <.001	—	4.54 [.05 : .41]	0.60 [-.32 : .06]	2.48 [-.40 : -.02]	53.82	10.26	-0.49	-0.12
PARC	.41 <.001	.13 .10	.24 .008	—	1.59×10 ¹² [-.78 : -.55]	27.39 [-.48 : -.12]	56.67	9.02	-1.18	1.02
PREOC	-.37 <.001	-.05 .008	-.14 .081	-.68 <.001	—	55.27 [.14 : .50]	20.79	13.35	0.94	0.64
NM	-.14 .087	-.25 .325	-.22 .01	-.32 .001	.34 1.00	—	.17	.38	1.69	0.87

Note: ATT: attachment (0 = insecure, 1 = secure), RST: relationship satisfaction, DTC: have to relate children, PARC: perceived ability to relate to children, PREOC: preoccupations related to motherhood; NM: negative meaning ascribed to motherhood, S: skewness, K: kurtosis. Unilateral contrasts in all cases

Table 3
Mediation models summary

		Estimate	95% CI	p
Model 1	ACME	-0.02	-0.10 : 0.05	.56
	ADE	0.08	-0.22 : 0.39	.55
	Total effect	0.07	-0.20 : 0.33	.62
	PM	-0.28	-3.07 : 2.55	.78
Model 2	ACME	-7.60	-15.15 : -0.61	.03
	ADE	-5.93	-15.02 : 2.46	.14
	Total effect	-13.53	-23.71 : -2.85	.01
	PM	0.56	0.06 : 1.35	.03

Note: Model 1: Attachment – Perceived ability to relate to children – Negative meaning, Model 2: Attachment – Perceived ability to relate to children – Preoccupations, ACME: average causal mediation effect; ADE: average direct effect; PM: proportion of mediated effect

Discussion

The strength of this study lies in examining parenting representations in the first trimester of pregnancy for first-time mothers. This is almost non-existent in the literature, and thus fills an important gap. As a consequence, a better understanding of attachment styles and prenatal expectations can translate into early psychotherapy and prevention initiatives that can help expectant mothers go into a smoother transition to parenthood. From a methodological point of view, this study is innovative because we use Bayes Factors as a complement to the classical p-value as suggested by Ruiz-Ruano & Puga (2018). Given that our sample size is relatively small, due to the nature of the research, we use non-parametric mediation models and an algorithm to automatically uncover dependence models from data.

The purpose of this research was to examine the association between pregnant women's attachment style and their caregiving representations - comprising of their DTC, PARC, meaning associated with motherhood, and preoccupations regarding becoming a mother. As expected, and in accordance with past research (Bjorgo, 2003; Conway, 2014; Priel & Besser, 2000; Rholes et al., 1995; Rholes et al., 1997; Rholes et al., 2006; Scharf

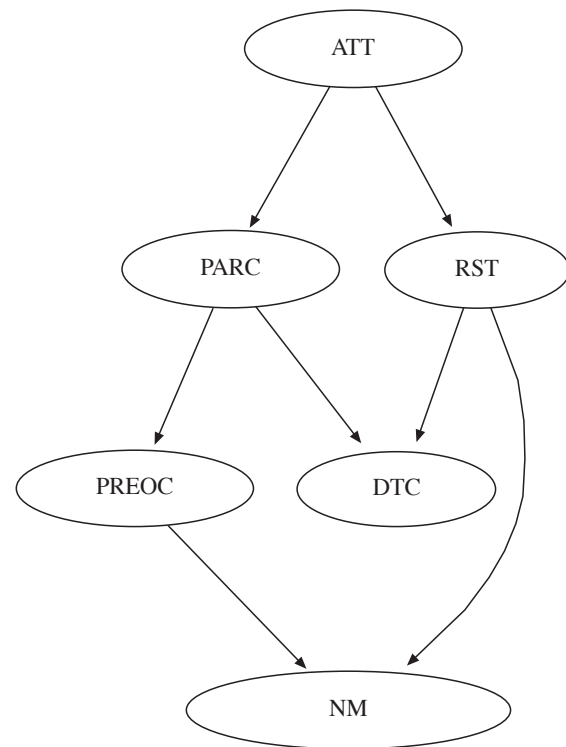


Figure 1. Bayesian network estimated with the tabu algorithm. ATT: attachment, RST: relationship satisfaction, DTC: desire to relate children, PARC: perceived ability to relate to children, PREOC: preoccupations related to motherhood; NM: negative meaning ascribed to motherhood

& Mayseless, 2011; Scharf & Rousseau, 2017; Tani, Castanga, & Ponti, 2017; Taubman - Ben-Ari et al., 2009; Wilson et al., 2007), the suggest confirm that expectant mothers with secure attachment have more positive pre-parenthood expectations and parenting representations than the ones with insecure attachment. They have a higher desire to have children, a higher perceived ability to relate to children, and lower preoccupations related to motherhood. In other words, they have a more positive internal working model of caregiving. This confirms Bowlby's concept of "intergenerational

transmission of attachment” since attachment style (originally stemming from relationship with parents) seems to affect one’s own experience of becoming a parent and is likely to affect interactions with the baby (Bowlby, 1988).

This study suggests that becoming a parent may trigger early experiences with caregivers, especially for those with challenging childhoods (Ballou, 1978; Siddiqui et al., 2000). It is likely to affect one’s confidence about becoming a good parent, whether one wants to become a parent in the first place, and what meanings and/or doubts arise regarding this transition. The literature explains that individuals from different attachment styles have distinct patterns of behaviour. For instance, avoidant/dismissing individuals generally value their independence and are uncomfortable with close emotional bonds, especially if characterized by some form of dependence (Conway, 2014). As for anxious/preoccupied individuals, they doubt their self-worth and whether others truly love and accept them for who they are. Finally, disorganized individuals usually have somewhat traumatized childhoods and complicated experiences with their caregivers (Teyber & Teyber, 2017). Therefore, when seen through the lens of transition to motherhood, insecurely attached individuals seem to face more challenges in adjustment and meaning-making of this phase.

Bayesian networks indicate that attachment style is a predictor for prenatal expectations, either directly or indirectly. Pregnant women with an insecure attachment style reported lower PARC and higher preoccupations regarding becoming a mother. They also experienced a lower relationship satisfaction with their partners, which, in turn, led to a lower DTC as well as a more negative meaning associated with motherhood (e.g., self-doubts, sense of obligation, fear).

The mediation findings are particularly interesting. The first mediation model suggests that insecure attachment leads to a negative meaning of motherhood through a lower PARC. Nevertheless, this model seems to be more complex and influenced by more variables. The second mediation model suggests that

insecure attachment leads to higher preoccupations through a lower PARC. These two models propose that insecure expectant mothers essentially have lower expectations of themselves as parents, which eventually leads to more general negative parenting expectations – namely, negative meaning and higher doubts/concerns regarding motherhood.

The findings of this study, however, should be considered within their context and some limitations can be highlighted. Firstly, the research is cross-sectional, exploratory and correlational in nature, therefore no causations can be directly interpreted from the results (Nosek et al., 2018). Additionally, the sample size, due to the inclusion criteria to select participants, is small and that is the reason why we used nonparametric statistical tests. The sample is characterized by a “roof-effect” regarding DTC and wanting the current pregnancy, which has important implications on their parenting representations (i.e. positive bias). All data are collected through self-reported questionnaires and social desirability can be present in responses. Additionally, the use of reverse-scored items in some scales may have negatively influenced the reliability of the results, as suggested by Suárez-Alvarez et al. (2018). Future studies can focus on the more detailed classification of attachment styles (i.e., secure, dismissing, preoccupied, and fearful) and to be longitudinal. We also think it will be useful to control the effect of medication or treatment history in future studies. Finally, future studies can also test whether attachment-related psychotherapy can improve prenatal expectations and lead to better parent-child relationship after birth.

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